

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

)	
LABORATORY SKIN CARE, INC., and)	
ZAHRA MANSOURI,)	Civil Action No. 06-601 (JFF)
)	
Plaintiffs,)	
)	
v.)	
)	
)	Jury Trial Demanded
LIMITED BRANDS, INC., and BATH &)	
BODY WORKS, INC.,)	PUBLIC VERSION
)	
Defendants.)	
)	

**APPENDIX OF EXHIBITS TO DEFENDANTS'
OPPOSITION TO PLAINTIFFS' MOTION TO COMPEL**

<u>Description</u>	<u>Exhibit No.</u>
Defendants' Third Supp. Resp. to Plaintiffs' First Set of Interrogatories	Exhibit 1
BBW 5964-6077, 125250-125265	Exhibit 2
BBW 125125-125126.....	Exhibit 3
BBW 1479-1496, 10863-11087.....	Exhibit 4
BBW 125034-125109.....	Exhibit 5
BBW 125127-125248, 50833-50840, 99799-99802, 104839-104862	Exhibit 6
BBW 82413.....	Exhibit 7
BBW 73963-73966, 74661-74663, 74949-74952.....	Exhibit 8

Respectfully submitted,

Dated: June 16, 2008
Public Version Filed: June 25, 2008

By: /s/ Francis G.X. Pileggi
Francis G.X. Pileggi (Del. Bar No. 2624)

Sheldon K. Rennie (Del. Bar No. 3772)
FOX ROTHSCCHILD LLP
Suite 1300
919 North Market Street
Wilmington, Delaware 19801
Phone: (302) 655-3667
Fax: (302) 656-8920
E-mail: fpileggi@foxrothschild.com
E-mail: srennie@foxrothschild.com

OF COUNSEL:

John F. Ward
David M. Hill
Michael J. Zinna
WARD & OLIVO
380 Madison Avenue
New York, New York 10017
Phone: (212) 697-6262
Fax: (212) 972-5866
E-mail: wardj@wardolivo.com
E-mail: hilld@wardolivo.com
E-mail: zinnam@wardolivo.com

Attorneys for Defendants
Bath & Body Works, Inc.
Limited Brands, Inc.

EXHIBIT 1

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

)	
LABORATORY SKIN CARE, INC., and)	
ZAHRA MANSOURI,)	Civil Action No. 06-601 (JFF)
)	
Plaintiff,)	
)	
v.)	
)	
)	Jury Trial Demanded
LIMITED BRANDS, INC., and BATH &)	
BODY WORKS, INC.,)	
)	
Defendants.)	
)	

**DEFENDANTS BATH & BODY WORKS, INC.'S AND
LIMITED BRANDS, INC.'S THIRD SUPPLEMENTAL
RESPONSE TO PLAINTIFFS' FIRST SET OF INTERROGATORIES**

Pursuant to Rule 33 of the Federal Rules of Civil Procedure (“Fed. R. Civ. P.”), Defendants Bath & Body Works, Inc. (“BBW”) and Limited Brands, Inc. (“LBI”) (collectively the “Limited Defendants”) supplement herein their responses to Plaintiffs Zahra Mansouri’s and Laboratory Skin Care, Inc.’s (collectively “Plaintiffs”) First Set of Interrogatories. The Limited Defendants incorporate by reference the “General Objections and Comments” and specific objections and responses set forth in Defendants Bath & Body Work, Inc.’s and Limited Brands, Inc.’s previous Responses.

THIRD SUPPLEMENTAL RESPONSES

INTERROGATORY NO. 2

Provide a list of all BBW anti-bacterial products developed, manufactured, produced or sold by BBW or LBI since June 17, 2003, and identify all persons responsible for the development, manufacture, production and sale of each product.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 2

The Limited Defendants incorporate herein the specific objections and responses identified in the Limited Defendants' previous Responses. Subject to the foregoing and the general objections referenced above, the Limited Defendants supplement their response to Interrogatory No. 2 as follows:

Regarding a list of anti-bacterial products:

The Limited Defendants have previously provided information and thousands of pages of documents regarding all of their anti-bacterial products. Plaintiffs have subsequently stated in writing that many of these products are not accused of infringement in this lawsuit. To the extent this request asks for information about those products, it is unduly burdensome and overly broad. The Limited Defendants reserve the right to supplement this response if necessary if additional products are accused of infringement.

Subject to the foregoing, the Limited Defendants state that they have developed, manufactured, produced or sold the following products: Anti-Bacterial Moisturizing Hand Lotion, Anti-Bacterial Foot Lotion (no longer being sold), and Anti-Bacterial Hand Cream (developed but never commercialized or sold). BBW has also sold the following "third party" products, which were developed, manufactured and produced by personal care companies not affiliated with LBI or BBW: the Redness Therapy Correcting Moisturizer by Murad, the Dermud Intensive Nourishing Cream by Ahava, and the Dermud Enriched Intensive Foot Cream by Ahava.

Regarding the identity of persons responsible for the development, manufacture and production of each product above:

REDACTED

Regarding the identity of persons responsible for the sale of each product above, the Limited Defendants have objected to this request as, *inter alia*, overly broad and unduly burdensome. It is not clear what Plaintiffs mean by “responsible.” Conceivably this could include every sales associate in every BBW store. The Limited Defendants will provide the names of individuals who are most likely to have information about the sale of these products.

Regarding the identify of persons who are most likely to have knowledge of the development, manufacture, production and/or sale of the Anti-Bacterial Hand Lotion, the Anti-Bacterial Hand Cream and the Anti-Bacterial Foot Lotion, the Limited Defendants incorporate their Initial Disclosures by reference.

Pursuant to Rule 33(d), Fed. R. Civ. P., documents responsive to this Interrogatory No. 2, to the extent any such documents exist, which are not immune from discovery on the basis of the attorney-client or attorney work-product privileges have been produced to Plaintiffs. The Limited Defendants identify at least the following additional documents:

BBW 0125125.

INTERROGATORY NO. 3

On a product-by-product basis, provide a list of all ingredients contained in each BBW anti-bacterial product identified in response to Interrogatory No. 2 and identify the function and/or purpose of each individual ingredient.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 3

The Limited Defendants incorporate herein the specific objections and responses identified in the Limited Defendants' previous Responses. Subject to the foregoing and the general objections referenced above, the Limited Defendants supplement their response to Interrogatory No. 3 as follows:

Pursuant to Rule 33(d), Fed. R. Civ. P., documents responsive to this Interrogatory No. 3, to the extent any such documents exist, which are not immune from discovery on the basis of the attorney-client or attorney work-product privileges have been produced to Plaintiffs. The Limited Defendants identify at least the following additional documents:

BBW 0125125.

INTERROGATORY NO. 8

Identify all persons who have knowledge of or who have reviewed any written or oral opinions of legal counsel provided to or received by BBW or LBI concerning the '516 patent.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 8

The Limited Defendants incorporate herein the specific objections and responses identified in the Limited Defendants' previous Responses. Subject to the foregoing and the general objections referenced above, the Limited Defendants supplement their response to Interrogatory No. 8 as follows:

The Limited Defendants do not intend to assert an advice of counsel defense.

INTERROGATORY NO. 9

Identify all opinions of counsel provided to and/or prepared for BBW or LBI concerning the '516 patent, including the date of such opinion, whether it was written or oral, the provider and recipient, and state whether BBW or LBI intends to rely on any such opinions of counsel in defending against the allegation that BBW and LBI have willfully infringed the '516 patent.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 9

The Limited Defendants incorporate herein the specific objections and responses identified in the Limited Defendants' previous Responses. Subject to the foregoing and the general objections referenced above, the Limited Defendants supplement their response to Interrogatory No. 9 as follows:

The Limited Defendants do not intend to assert an advice of counsel defense.

INTERROGATORY NO. 10

For each claim of the '516 patent, identify all claim limitations, if any, you allege are not met by each of the BBW anti-bacterial products identified in response to Interrogatory No. 2. [SIC] and for each element that you contend is the basis for or supports your non-infringement position, explain in detail your construction of that claim element as used in the claims and provide a detailed explanation of why you contend the claim elements are not present in the BBW anti-bacterial product.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 10

The Limited Defendants incorporate herein the specific objections and responses identified in the Limited Defendants' previous Responses. Subject to the foregoing and the general objections referenced above, the Limited Defendants supplement their response to Interrogatory No. 10 as follows:

This request is overly broad to the extent that it requests non-infringement contentions for products that have not been accused of infringement, and for which Plaintiffs have not provided infringement contentions. Plaintiffs have only provided infringement contentions for BBW's Anti-Bacterial Moisturizing Hand Lotion. The Limited Defendants' response is limited to this

product. The Limited Defendants reserve the right to supplement their response if Plaintiffs accuse additional products of infringement.

Plaintiffs have asserted that the Anti-Bacterial Moisturizing Hand Lotion infringes Claims 1, 2, 3, 4, 5, 6, 7, 12, 13, 14, 15, 16, 17, and 18 of the patent-in-suit (the “asserted claims”). Of the asserted claims, only Claims 1 and 12 are independent. The Limited Defendants do not infringe any valid claim of the patent-in-suit for at least the following reasons:

When possible, claims should be construed to presume their validity. *Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999). Applying this canon of construction here, the moisturizing composition of Claim 1 and the moisturizing method of Claim 12 both require the presence of an absorption enhancer in the moisturizer. *See e.g.*, the ‘516 patent, col. 4, lns. 19-21, 66-67. Any other reading of those claims in light of the specification and prosecution history of the patent-in-suit, as well as the specifications and prosecution histories of related patents and applications, would render the asserted claims invalid as anticipated under 35 U.S.C. § 102, obvious under 35 U.S.C. § 103, and/or indefinite under 35 U.S.C. § 112.

REDACTED

The Limited Defendants reserve the right to supplement their response to this Interrogatory No. 10 if and when Plaintiffs assert that additional products infringe one or more claims of the patent-in-suit.

INTERROGATORY NO. 11

Explain in detail the complete factual basis for your contention that the '516 patent is invalid, including a detailed explanation of each legal theory upon which you base any invalidity contentions, identifying with particularity each event, disclosure, reference, or publication forming the basis for such contention, including each party or person with knowledge of any such event, disclosure, reference, publication and all documents and things that support, contradict or relate to your contention.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 11

The Limited Defendants incorporate herein the specific objections and responses identified in the Limited Defendants' previous Responses. Subject to the foregoing and the general objections referenced above, the Limited Defendants supplement their response to Interrogatory No. 11 as follows:

The patent-in-suit is anticipated by at least the following additional reference: U.S. Patent No. 5,416,075.

Pursuant to Rule 33(d), Fed. R. Civ. P., documents responsive to this Interrogatory No. 11, to the extent any such documents exist, which are not immune from discovery on the basis of the attorney-client or attorney work-product privileges have been produced to Plaintiffs. The Limited Defendants identify at least the following additional documents: BBW 011162-011278, BBW 0123595-0124952, and BBW 0124953-0125020.

INTERROGATORY NO. 12

Identify each piece of prior art to the '516 patent of which you are aware or on which you intend to rely to support your assertion that the '516 patent is invalid.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 12

The Limited Defendants object to this Interrogatory as premature, but recognize their obligation to supplement this response in accordance with the Federal Rules. Subject to the

Subject to the forgoing specific objections and the general objections stated above, the Limited Defendants respond to Interrogatory No. 12 as follows:

The Limited Defendants incorporate by reference their responses to Interrogatory No. 11.

INTERROGATORY NO. 19

On a year-by-year basis, since June 17,2003, state how much revenue has been received and how much profit has been earned by BBW and/or LBI for each of the BBW anti-bacterial products developed, manufactured, produced, sold or used by BBW and/or LBI, including but not limited to the Warm Vanilla SugarTM and Coconut Lime Verbena products.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 19

The Limited Defendants object to this Interrogatory as premature, but recognize their obligation to supplement this response in accordance with the Federal Rules. Subject to the Subject to the forgoing specific objections and the general objections stated above, the Limited Defendants respond to Interrogatory No. 19 as follows:

Pursuant to Rule 33(d), Fed. R. Civ. P., documents responsive to this Interrogatory No. 19, to the extent any such documents exist, which are not immune from discovery on the basis of the attorney-client or attorney work-product privileges have been produced to Plaintiffs. The Limited Defendants identify at least the following documents: BBW 005964-006077 and BBW 0125250 - 0125265.

INTERROGATORY NO. 20

If you contend that any claim or claim term of the '516 patent requires claim construction, describe your proposed construction of each claim or claim term and the bases for such construction, and identify the support for your construction of the claims and claim terms, including an identification of all portions of the specifications and/or prosecution histories and any extrinsic or other evidence relied upon by you to support the construction.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 20

The Limited Defendants object to this Interrogatory as premature, but recognize their obligation to supplement this response in accordance with the Federal Rules. Subject to the Subject to the forgoing specific objections and the general objections stated above, the Limited Defendants respond to Interrogatory No. 20 as follows:

The Limited Defendants note their obligations under Paragraph 8 of the Amended Scheduling Order, dated April 25, 2008 (D.I. 57), which requires the parties to exchange contentions regarding claim construction by September 12, 2008.

Respectfully submitted,

Dated: June 11, 2008

By: /Francis G.X. Pileggi/
Francis G.X. Pileggi (Del. Bar No. 2624)
Sheldon K. Rennie (Del. Bar No. 3772)
FOX ROTHSCHILD LLP
Suite 1300
919 North Market Street
Wilmington, Delaware 19801
Phone: (302) 655-3667
Fax: (302) 656-8920
E-mail: fpileggi@foxrothschild.com
E-mail: srennie@foxrothschild.com

OF COUNSEL:

John F. Ward
David M. Hill
Michael J. Zinna
WARD & OLIVO
380 Madison Avenue

New York, New York 10017
Phone: (212) 697-6262
Fax: (212) 972-5866
E-mail: wardj@wardolivo.com
E-mail: hilld@wardolivo.com
E-mail: zinnam@wardolivo.com

Attorneys for Defendants
Bath & Body Works, Inc.
Limited Brands, Inc.

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served on this 11th day of June, 2008 via email and U.S. First Class Mail, upon the counsel of record shown below:

Melanie K. Sharp
Young, Conaway, Stargatt & Taylor
The Brandywine Building
1000 West Street, 17th Floor
P.O. Box 391
Wilmington, Delaware 19899-0391

E. Anthony Figg
Sharon L. Davis
C. Nicole Gifford
Daniel L. Shores
Rothwell, Figg, Ernst & Manbeck, P.C.
1425 K Street, N.W.
Suite 800
Washington, D.C. 20005

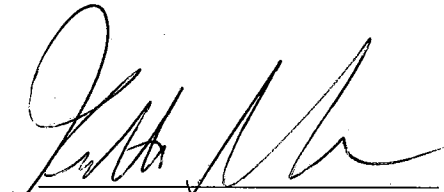

Patrick R. Colsher

EXHIBIT 2

EXHIBIT

2

REDACTED

EXHIBIT 3

EXHIBIT

3

REDACTED

EXHIBIT 4

EXHIBIT

4

REDACTED

EXHIBIT 5



United States Patent [19]

[11] Patent Number: 6,045,813

Ferguson et al.

[45] Date of Patent: Apr. 4, 2000

[54] LOTIONS AND GELS WITH ACTIVE
INGREDIENTS IN BEADS

[56] References Cited

[75] Inventors: John Ferguson, Westerville; George
Ziets, New Albany, both of Ohio

U.S. PATENT DOCUMENTS

5,089,269 2/1992 Noda et al. 424/456

[73] Assignee: Bath & Body Works, Inc.,
Reynoldsburg, OhioPrimary Examiner—James M. Spear
Attorney, Agent, or Firm—Colucci & Umans

[21] Appl. No.: 09/050,536

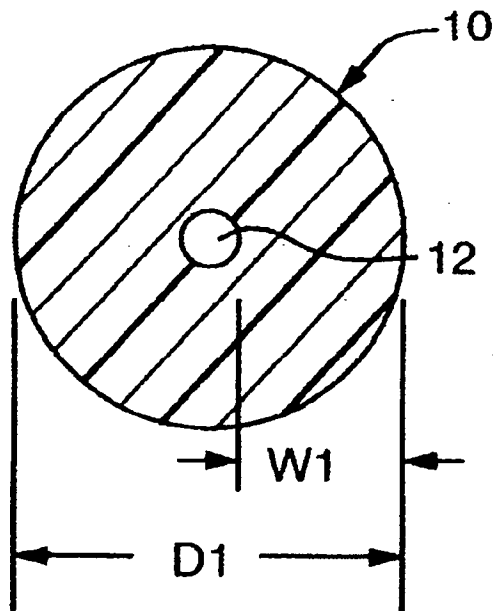
[57] ABSTRACT

[22] Filed: Mar. 30, 1998

[51] Int. Cl.⁷ A61K 7/00; A61K 7/021;
A61K 9/48; A61K 9/50[52] U.S. Cl. 424/401; 424/63; 424/451;
424/455; 424/452; 424/489; 514/844; 514/846;
514/847; 514/951; 514/952[58] Field of Search 424/451, 455,
424/456, 401, 489, 63, 452; 428/402.2

A flowable personal care or cleaning composition, comprising a carrier and friable beads dispersed in the carrier, the beads containing an active ingredient and enclosing the active ingredient in a wall of bead material, the active ingredient amounting to approximately 0.5–5.0% by weight of the bead including its wall material and the active ingredient.

20 Claims, 3 Drawing Sheets



U.S. Patent

Apr. 4, 2000

Sheet 1 of 3

6,045,813

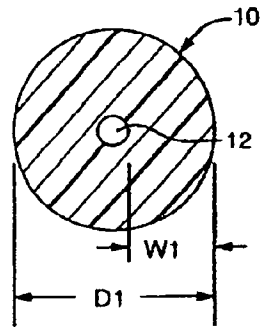


FIG. 1

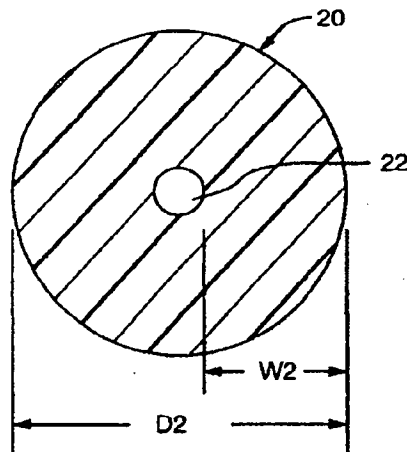


FIG. 2

U.S. Patent

Apr. 4, 2000

Sheet 2 of 3

6,045,813

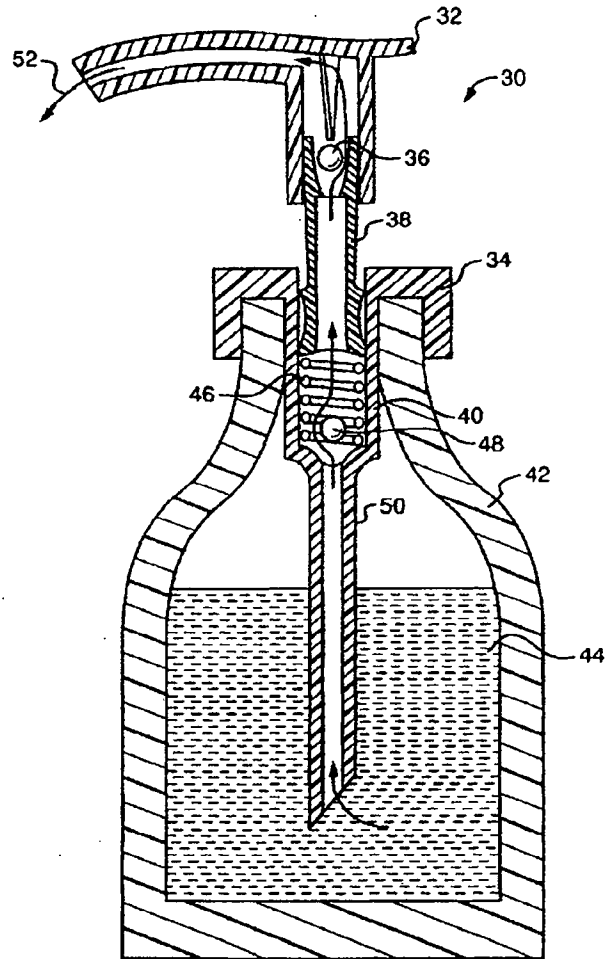


FIG. 3

U.S. Patent

Apr. 4, 2000

Sheet 3 of 3

6,045,813

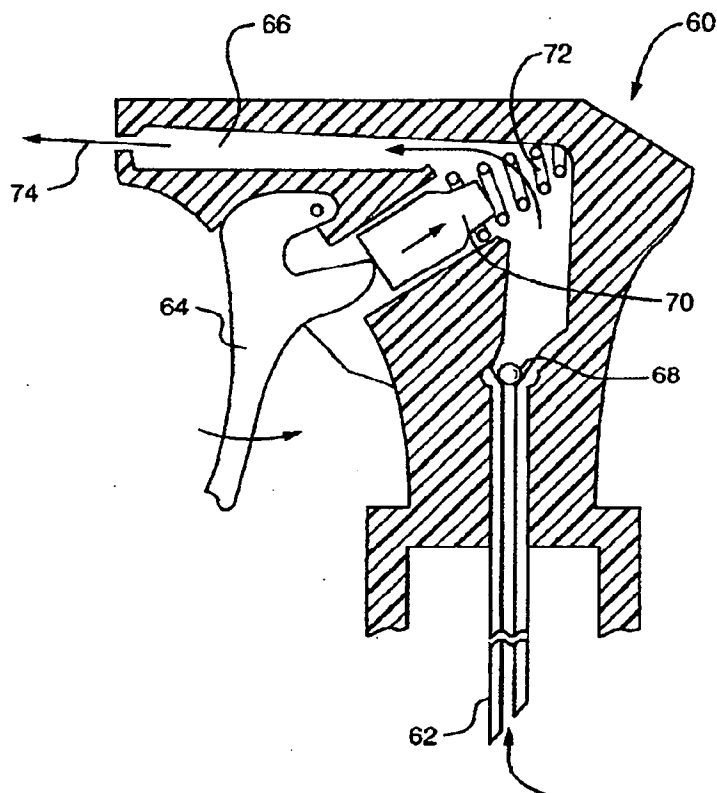


FIG. 4

6,045,813

1 **LOTIONS AND GELS WITH ACTIVE INGREDIENTS IN BEADS**

FIELD AND BACKGROUND OF THE INVENTION

The present invention relates, in general, to skin care and household products, and in particular, to a new and useful gel or lotion which can be used for such things as sanitizing the hands, moisturizing and adding fragrance to the skin, a shampoo, a liquid soap product, a household cleanser and the like, which includes active ingredients such as antibacterial agents or essential oils, which are captured within friable beads.

The use of microencapsulation is known in various fields. Microencapsulation involves the capturing of active ingredients within a shell which can be broken or dissolved, depending on the environment in which the active ingredient is to be released. Generally, however, microencapsulation has been utilized in the pharmaceutical and quasi-pharmaceutical field, to time release medication, vitamins or minerals by encapsulating the active ingredient within a shell which dissolves over time in the stomach.

The use of encapsulated materials to control release and improve the stability of composition is well established. Encapsulation efficiency can be improved by reducing the relative percentage of the protective wall material and increasing the quantity of the core encapsulate. Emphasis has been placed on maximizing the absolute delivery of the encapsulated core material. The present invention teaches the use of macro capsules (500-1,500 microns) as a way to visually mark the coverage of personal care, household and pharmaceutical preparations. Further, this invention teaches a very low concentration of core material (0.5% to 5.0%) is an effective way to provide controlled release and visual indication of product coverage, which is contrary to general teaching in this field. The present invention can also be used to mix incompatible, quasi-compatible or complementary ingredient (carrier formula and beads contents) at the time of use.

SUMMARY OF THE INVENTION

An object of the present invention is to take advantage of rupturable beads in a liquid gel or lotion, which contain small amounts of active ingredients for use in cleansing, treating or adding fragrance to the skin of a user or for other household uses.

According to the present invention, the beads may contain either an antiseptic such as Triclosan, or essential fragrance oils, referred to as essential oils, for imparting fragrance and/or other active ingredients to the skin such as moisturizers and the like, or as cleansers for other surfaces.

It was found by the inventors that the use of beads which were too flexible would allow the beads to survive the manufacturing process, but the beads would not then readily break when the lotion or gel was rubbed onto the skin. One hurdle which was overcome by the present invention was to utilize beads of proper diameter and wall thickness which did not rupture during the manufacturing process, but, after a 24 to 48 hour induction period were friable (pulverizable or rupturable) when the lotion or gel was rubbed onto the skin or dispensed through a restrictive orifice. It was found that beads that contained only about 0.5 to about 5% by weight active ingredient and which are mostly wall material, could be used according to the present invention and in fact, added an additional advantage in that the wall material could contain coloring which would act as an indicator to the user

2

both that enough of the active ingredient was present on the hands or surface and secondly, that the active ingredient has been released in that the color would smear, indicating rupturing of the beads.

The use of beads also permitted the inventor to utilize a dual fragrance system. One fragrance is in the carrier lotion which carries the beads. This fragrance is tailored to be pleasant when exposed to the air. Another different fragrance, however, was used with the active ingredient in the beads, in particular, in the version of the invention for dispensing essential oils to the skin. This different fragrance was selected both to give a different scent, but also to be of the type of fragrance which is best activating when coming into contact with the skin. It is known in the field of fragrances that some fragrances are more effective as "room fresheners" and others are more effective as "perfumes" in that they are more active and have different advantageous effects when applied to the skin. By providing the active ingredient with the skin compatible fragrance in the beads, two separate fragrances could be utilized in the product, and fragrances which were tailored for their particular use, that is, either to give out a fragrance simply upon contact with the air or to give out a fragrance best when in contact with the skin.

The lotion and gels of the present invention whether for containing the essential oils or the antibacterial agent, have preferred approximate diameters of about 500 to 900 microns with a wall thickness of about 210 to 440 microns.

Compositions in the form of a shower gel containing beads with essential oils, are generally about 1000 to 1500 microns in diameter with a wall thickness of about 460 to about 740 microns.

Despite the relatively small volume within the bead wall, which is available for containing the antibacterial agent or essential oil at a rate of only about 0.5 to about 5% by weight of the overall bead, sufficient active ingredient is present to satisfy the purpose of the invention and also to add the indicating function and provide sufficiently robust beads. Accordingly, the seeming disadvantage of having beads with very large wall thicknesses, is more than compensated by the other advantages of indication and friability characteristics.

The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and specific objects attained by its uses, reference is made to the accompanying drawings and descriptive matter in which a preferred embodiment of the invention is illustrated.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a cross-sectional view of a bead for containing an active ingredient and for use in a lotion composition of the present invention;

FIG. 2 is a view similar to FIG. 1 of another embodiment of the bead for use with a gel of the present invention;

FIG. 3 is a schematic sectional view of a dispenser for lotions and gels which can be used to dispense the composition of the present invention and to practice the method of the present invention; and

FIG. 4 is a schematic sectional view of a sprayer mechanism which can also be used to dispense the composition of the present invention and in accordance with the method of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings, FIG. 1 illustrates a bead generally designated 10 in accordance with the present

6,045,813

3

invention having a diameter D1 of about 500 to 900 microns and a wall thickness W1 of about 210 to 445 microns. Although these measurements are approximations, they are representative and illustrate the fact that bead 10 is mostly wall thickness with only a very small, roughly spherical volume 12 remaining to contain the active ingredients whether it is the antibacterial agent or the essential oils of the present invention. By weight, bead 10 is about 98 to 99.5% wall material and only about 0.5 to about 2% active ingredient in volume 12.

These dimensions are representative for the beads used in the lotions of the present invention, both the essential oil containing lotion referred to as an "Aromatherapy" lotion, and an antibacterial lotion containing Triclosan or other antibacterial agent.

FIG. 2 illustrates a bead generally designated 20 useful in gels of the present invention such as shower gels and shampoo gels. In this embodiment, the diameter D2 is about 1000 to 1500 microns and the wall thickness W2 is about 420 to 740 microns. This also leaves a volume 22 for containing only about 0.5 to about 5.0% by weight active ingredient, the bead being mostly inert wall material.

Although intuitively, this would appear to be a disadvantage in that very small amounts of active ingredients are present, in fact, the thick walls of the beads compensate any disadvantages by providing the advantages of dual fragrance capabilities and beads which are not friable during the manufacturing process involving mixing together and loading of the lotions or gels into bottles. The beads, after a 24 to 48 hour induction period, do become friable when they are massaged into the skin or scalp, however, causing the beads to break and thus releasing their active ingredients in sufficient quantities to have the desired effects. In addition, the wall material can contain a harmless non-toxic colorant which is water soluble or water dispersible and which adds to the effect of the invention by providing a visual cue to the amount of active ingredient being worked into the skin and also the fact that sufficient mechanical massaging has taken place to activate the ingredients by rupturing the beads and smearing to color. The beads, in effect, rupture and smear across the skin, releasing the active ingredient. The bead material is easily washed away with water, however, so that no adverse effect occurs. For example, a white, yellow or pink translucent or clear lotion or gel may contain blue or green color beads.

Another use of the invention involved a hydro alcoholic solution capable of dispensing a fragrance or providing an effective disinfective alcohol concentration to the skin or a hard surface. In this application, the encapsulated bead breaks inside the pump mechanism, intimately mixing and coloring the solution. Thus a clear solution with colored beads dispersed throughout can be dispensed onto the skin as a colored product. This can be used for both aesthetic purposes and functionally to mark product placement on the skin or some other surface.

An example of the shower gel has the following approximate composition and range of amounts:

TABLE 1

Ingredient	Representative Amount	Range
Water	45	35-70
Thickener	1.2	0.5-5
Surfactant	36	12-40
Fragrance	2	0.5-3
Emollient	2	0.5-5

An example of a lotion according to the present invention is:

4

TABLE 2

Ingredient	Representative Amount	Range
Water	80	40-90
Emulsifier	4	3-10
Emollient	10.75	2-10
Benzocaine	0.7	0.1-1
Fragrance	1.0	0.2-3
Triclosan	0.3	0.1-1

In the lotion, the beads amount to approximately 0.5 to 2.0% by weight of the overall composition and in the gel, the beads amount to 0.5 to 1.0% of weight of the overall composition.

To be effective, the wall material must be colored and possess sufficient strength to withstand normal manufacturing mixing, pumping and filling operations. In use, the wall material must be friable enough to break easily with hand pressure or implement (cloth, sponge or paper) wiping.

Ideally, the macro capsule should have an impervious wall material in the dry state and gradually soften in the cleaning, cosmetic or pharmaceutical preparation. This characteristic allows the capsules to be processed fresh, in a hardened state, and become friable when equilibrium is established with the preparation.

Capsule breakage can be accomplished by hand or implement pressure after the preparation has been dispensed. It can also be fractured at the time of application by dispensing the preparation through a mechanical pump or restricted orifice. This latter technique allows the colored wall material and its encapsulate core to intimately mix with the preparation at the precise moment of use. The resultant product is colored and provides strong visual indication of its coverage.

If the internal clearances of the pump are smaller than the D1 or the D2 in FIGS. 1 and 2 herein, the cross sectional diameter of the bead, it will rupture inside the pump and intimately mix with the rest of the formula. This could lead to the mixing of two quasi-compatible or incompatible ingredients (formula and bead) to produce neutralization, heat, color or some other chemical reaction.

After the beads are placed in solution (aqueous or hydroalcoholic) the wall slowly softens and becomes friable. This induction period is dependent upon time, temperature and the surface activity of the formula. For the examples, this induction period is 24 to 48 hours at room temperature.

The following examples demonstrate the utility of the invention across three broad product categories: pharmaceutical, personal care and cleaners. These examples also demonstrate the importance of the induction period to produce friability. Finally, the examples demonstrate the bead release mechanics, via hand or implement wiping and internal breakage, via mechanical dispensing.

In all of the applications cited, the 500 to 1500 microns (31 thousandths to 58 thousandths of an inch) cellulose, lactose, hydroxypropyl methyl cellulose spherical macro beads identified by the trademark UNISPHERES manufactured by Induchem AG of Dubendorf, Switzerland and with the generalized formula listed below were added to the formula last. The formulas were then transferred by pouring, (for laboratory preparations), or by pumping, (for commercial preparation), to their final containers. Standard diaphragm or displacement pumping equipment can be used so long as the beads have not passed through their induction

6,045,813

period; i.e. when first added to the formula they are not shear sensitive as defined by the examples described below.

TABLE 3

Generalized Bead Compositions	
Material	% by weight
Lactose	98
Cellulose	
Hydroxypropyl Methyl Cellulose	
Color	2
Perfume or triclosan	100

Product or Example B was then allowed to remain at room temperature for 48 hours. After this induction period, product dispensed from the tube quickly broke under hand pressure. The presence of the blue colored beads clearly marked where the lotion had been dispensed. When the lotion was spread onto the skin, the hand pressure caused the blue colored beads to quickly break citing a trail of color which designated to the user product coverage. As the lotion was rubbed into the skin, the blue dissipated and left no recognizable color on the skin.

In a similar fashion, after 48 hours at room temperature, the product in Product B was dispensed through each of the two Calmar dispensers previously described. The results are described below. The pump of FIG. 3 is a high volume pump (0.8 to 1.2 g per actuation) and has internal tolerances greater than the cross-sectional diameter of the bead. That is

TABLE 4

Anti-Bacterial Water in Oil Lotion Formulas										
Material	A	B	C	D	E	F	G	H	I	Function
Water	QS	QS	QS	QS	QS	QS	QS	QS	QS	Carrier
Triclosan	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	Biocide
Glycerin	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	Humectant
Stearic Acid	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	Emulsifier
Tyrosinase	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	Neutralizer
Amine	—	—	—	—	—	—	—	—	—	—
Cetyl Alcohol	—	—	0.75	0.75	0.75	0.75	0.75	0.75	0.75	Emulsifier
Glycol	—	—	3.5	3.5	3.5	3.5	3.5	3.5	3.5	Emollient
Stearate	—	—	—	—	—	—	—	—	—	—
Dinethicone	—	—	0.25	0.25	0.25	0.25	0.25	0.25	0.25	Occlusive Agent
Wheat Germ Oil	—	—	—	—	0.4	0.4	0.4	0.4	0.4	Conditioning Agent
Parabenol	—	—	—	—	0.1	0.1	0.1	0.1	0.1	Conditioning Agent
Perfume, Apple	—	—	—	—	—	1.0	1.0	1.0	1.0	Fragrance
F, D, & C Yellow 6	—	—	—	—	—	—	—	—	0.001	Colorant
Ultramarine	—	1.0	—	1.0	—	0.5	—	0.75	1.0	Biocide
Blue Beads	—	—	—	—	—	—	—	—	—	Visual Indicator
	100	100	100	100	100	100	100	100	100	

Examples A through H (Pharmaceutical Application): Various triclosan containing anti bacterial oil in water emulsions were prepared by dispensing an aqueous phase into the oil phase and mixing until uniform. Color, fragrance, and skin conditioning agents were added to modify the preparation for various applications.

The product in example A is an opaque white emulsion. When applied to the skin it is difficult to visually gauge product coverage. Product from example B, containing the lactose-cellulose beads was placed in a tube and in two 8 oz. PVC plastic bottles fitted with commercially available dispensers, one of which is FIG. 3. This and other suitable dispensers are available from Calmar Inc. of City of Industry, Calif.

Within an hour of preparation and filling, it was attempted to dispense Example B from another lotion pump dispenser with small complex internal passages. The beads quickly clogged the dispenser and product could not be dispensed. Product B was also dispensed from the bottle using the high volume of FIG. 3 pump. This time the product dispensed easily and the individual blue beads were readily observed in the white lotion. However, like the Product B dispensed from a tube, the beads were hard and could not be broken by hand rubbing.

the blue beads passed through the pump mechanism without breaking and was dispensed onto the skin as a white lotion with discrete blue beads dispensed throughout. As with the product dispensed from the tube, the white lotion with blue beads quickly broke with hand pressure, marked where the lotion had been, and quickly faded away leaving no recognizable color.

The other Calmar pump (a model MD-150) is a low volume pump (0.10 to 0.25 g per actuation) with internal tolerances smaller than the cross-sectional diameter of the beads. When dispensed, the internal pump mechanism in the MD-150 broke the beads, mixed them with the dispersed phase and the product exited the pump as a light blue homogeneous lotion. That is, the blue beads broke inside the pump at the discharge valve inside the spin chamber and mixed into the white lotion to produce a single-phase light blue lotion. The light blue lotion was easily discernable on the skin and quickly dissipated as it was rubbed into the skin. In a similar fashion, the product example pairs described by C/D, E/F and G/H behaved in the same fashion. The white lotions in C, E and G were functional but did not provide the user with a clear indication of product location or coverage. The white lotion with blue beads; D, F and H, after a 48 hour induction period, could be dispensed as an intact discrete two component system through a tube or a mechanical

6,045,813

7 pump, e.g. the Calmar pump of FIG. 3 whose internal pumping tolerances or final restriction metering orifices were greater than the cross-sectional diameter of the beads. If the pump tolerances or final metering orifices were less than the cross-sectional lead diameter, the blue Triclosan beads broke and thoroughly mixed together to produce a homogenous single light blue lotion. The color of lotion could be easily adjusted by varying the concentration of blue Triclosan beads in the final formula. The higher the bead concentration, the more intense the homogeneous blue color.

This discovery also permits the preparation of two chemically incompatible ingredients to exist together in either the continuous lotion phase or dispersed bead phase. To demonstrate this, a small amount of F, D & C Yellow No. 6 was added to preparation H to produce Example I, a light yellow lotion with blue beads. When dispensed from a tube or a bottle fitted with a FIG. 3 pump, after the 48-hour induction period, the user could readily observe on the skin a light yellow lotion with blue Triclosan beads. This turned into a light green lotion as the hand pressure broke the beads and the blue and yellow mixed together. If a Calmar MD-150 pump is used, the light yellow lotion with blue Triclosan beads in the bottle will dispense as a homogenous light green lotion because the internal pump mechanism will break the blue beads and thoroughly mix them with the yellow lotion.

To further demonstrate the utility of this invention, the following examples are listed in Table 5 below. In all cases the beads were added to formula G for 24 to 48 hours before the experiment was conducted.

TABLE 5

Experiment	Appearance Before Dispensing	Calmar Dispenser	Appearance After Dispensing
1. Formula G + 1% blue beads	White Lotion with Blue Beads	MD-150	Uniform Light Blue Lotion
2. Formula G + 6% blue beads	White Lotion with Blue Beads	MD-150	Uniform Dark Blue Lotion
3. Formula G + 1% blue beads and 1% yellow beads	White lotion with Blue and yellow beads	MD-150	Uniform medium Green Lotion
4. Formula G + 1% blue beads with purple beads	White lotion with purple beads	MD-150	Uniform medium Purple Lotion
5. Formula I	Yellow Lotion with Blue Speckles	MD-150	Uniform medium Green Lotion
6. Formula I	Yellow Lotion with Blue Speckles	FIG. 3	Yellow lotion with Blue Speckles which Formed a Medium Green Lotion When Rubbed into the Skin.

These experiments indicate a wide variety of colors and intensities can be created by either dispersing the appropriate concentration of colored beads in a white lotion or adding the appropriate concentration of colored beads to a colored lotion. The color can be created by fracturing the friable beads in the internal mechanical dispensing device when the pump tolerances are smaller than the cross sectional bead diameter. Alternately, the color can be created in situ on the skin or other hard surface by dispensing the preparation through a tube or mechanical dispenser with internal metering tolerances greater than the cross sectional bead diameter.

Those skilled in the art would readily recognize this discovery is also applicable to encapsulating one or more chemically reactive species within a bead and uniformly mixing the ingredient into the preparation at either the moment of mechanical dispensing or upon hand and/or implement pressure as the preparation is rubbed into the skin.

In each of the foregoing formulas and experiments, the presence of the colored ultramarine blue beads containing the triclosan active provided the user with a visible marker that the antibacterial preparation was being correctly and uniformly applied to the treated area. This is especially helpful to users where under application could create secondary infection or over application could create undue surrounding tissue trauma.

This invention is also applicable to other uses such as disinfecting hand surface cleansers and personal care products where visible indication of product coverage or specialized encapsulation of ingredients are important for performance and functionality.

TABLE 6

Material	J	K	L	M	Function
Ethyl Alcohol	65	65	65	65	Anti Microbial
Water	Q5	Q5	Q5	Q5	Solvent
Diisopropyl Amine	0.5	0.5	0.5	0.5	Neutralizer
Carbopol 941	0.35	0.35	0.35	0.35	Thickening/ Suspending Agent
Aloe Vera Gel	—	—	0.5	0.5	Moisturizer
Perfume, Apple	—	—	1.0	1.0	Fragrance
Ultramarine Blue	—	0.5	—	1.0	Block, Visual
Triclosan Beads	100	100	100	100	Indicator

Formulas J through M are transparent, thickened, alcohol gels with viscosities of 5,000 to 8,000 cps. Formulas J and K are suitable hard surface disinfectant formulas suitable for kitchen and other food contact sanitization applications. They are also disinfectant products for bathroom and other hard surface articles such as doorknobs, shopping cart handles and telephone receivers. The formulas were made by dispensing the Carbopol 941 into water, neutralizing it with diisopropylamine and adding the alcohol. Perfume moisturizer and/or Triclosan beads were subsequently added.

The triclosan containing blue beads were added to formulas K and M and used within 30 minutes of preparation and after a 24 hour induction period. Formula K was dispensed with a trigger spray pump fabricated with a transparent plastic housing as shown in FIG. 4. This device was chosen because the blue beads could be visually observed during the dispensing operation.

Formula J, when sprayed onto a white enameled surface, was difficult to visually observe for coverage. Ultramarine blue triclosan beads were added to produce Formula K. When sprayed through the trigger spray pump within thirty minutes of preparation the pump quickly clogged. Visual inspection of transparent pump mechanism revealed the beads had become lodged in both the dip tube leading to the piston chamber and in the piston chamber itself. Both areas were full of unbroken beads, rendering the pump nonfunctional. After 24 hours, Formula K was transferred to a new bottle and a new trigger spray pump of FIG. 4 was attached

6,045,813

9

to the bottle. The formula easily dispensed through the pump. Visual inspection of the pump indicated the piston chamber contained a clear light blue homogenous solution indicating the clear continuous phase of the alcohol sanitizer had thoroughly mixed with the ultramarine triclosan beads. When sprayed onto a white enameled surface, a light blue solution was readily observed. This light blue solution was easily wiped away with a paper towel yielding a clean, disinfected surface.

Formula L an instant hand sanitizer, was poured onto the hands and rubbed into the skin. Product coverage was difficult to observe. Formula M was poured onto the hands within 30 minutes of preparation. A clear alcohol gel containing bright blue speckles was readily observed. The formula when rubbed into the hands, was very uncomfortable. The beads were hard and granular and could not be broken with hand pressure. After 24 hours, Formula M was poured into the hands. The transparent alcohol gel containing blue speckles easily fractured with hand pressure marking where the product had been applied. The formula easily rubbed into the hands and left no observable color.

Formulas N through Q are transparent, thickened, surfactant cleaning solution with viscosities of 8,000 to 20,000 cps. As in the previous examples, the lactose/cellulose beads described in Table 3 required a 24 to 48 hour induction period before the beads became friable and easily broken by mechanical, hand or implement pressure. The colored lactose/cellulose beads used in Formulas O and Q contained a 100% active perfume oil specifically designed to be substantive to the skin. This cocapsulated oil was different from the bulk fragrance in the shower gel. Bulk fragrances must be specifically formulated to be compatible with the preparation. They are incorporated into the final product with solvents or emulsifiers to yield homogenous solutions or dispersions. Since most of the perfume will be either rinsed, wiped or washed away, it is a very inefficient process to directly apply perfume to an absorbent substrate such as skin and retain lasting fragrance benefit from the absorbed perfume. Furthermore, the only fragrance effect that can be created is that fragrance which comes from the bulk perfume in the formula.

The examples listed in Table 7 demonstrate the ability to formulate a dual fragrance personal care product. This invention permits the user to experience both the fragrance from the bulk product during the shower or bathing activity and the same or different fragrance directly apply to the skin from a friable encapsulated fragrance bead. This produces a longer lasting fragrance benefit.

TABLE 7

Material	Bath and Shower Formulas Percent by Weight				Function
	N	O	P	Q	
TEA Laurel Sulfate	18.0	18.0	18.0	18.0	Surfactant
Water	QS	QS	QS	QS	Solvent
Carbopol 2020	1.2	1.2	1.2	1.2	Thickener
Carbomethylcellulose	0.1	0.1	0.1	0.1	Suspending Agent
Triethanol Amine	1.3	1.3	1.3	1.3	Neutralizer
Propylene Glycol	5.0	5.0	5.0	5.0	Rheology Control
Ethyl Alcohol	4.0	4.0	4.0	4.0	Rheology Control
Carbowax 400	0.9	0.9	0.9	0.9	Emulsifier
Citric Acid	0.1	0.1	0.1	0.1	pH Control
Silicone Fluid	2.0	2.0	2.0	2.0	Moisturizer
Geraniol II	1.0	1.0	1.0	1.0	Preservative

10

TABLE 7-continued

Material	Bath and Shower Formulas Percent by Weight				Function
	N	O	P	Q	
<u>Fragrance:</u>					
HARA30250R	2.0	2.0	2.0	2.0	Perfume
D&C Violet #2	0.007	0.007	0.007	0.007	Colorant
Alco Vers Gel	—	—	0.1	0.1	Moisturizer
Chamomile Extract	—	—	0.1	0.1	Skin Softener
Purple Fragrance	—	0.5	—	0.5	Substantive
Beads H&R A3050D	—	—	—	—	Skin Fragrance and Visual Indicator

Formula N and O were dispensed onto a wash cloth and spread over a wet forearm. Both products foamed and cleaned the skin. Formula O, with the purple fragrance beads provided a clear visual marker on the skin and were easily broken by rubbing them with the wash cloth.

To demonstrate the advantages of having a separate, skin substantive fragrance in a macro capsule bead, the following experiment was conducted with formulas P and Q. As noted in Table 7, the only difference between the two formulas is the 0.5% by weight of the violet bead containing the skin substantive fragrance H&R A 3050D which was different from the fragrance H&R A 30250R in the bulk product.

A test subject placed 15 g of Formula P on his moistened left arm and lathered the arm for 15 seconds with his hand. The arm was then thoroughly rinsed for 60 seconds with 95° F. tepid water from a fast flowing faucet (1.5 to 2.0 gallons per minute). The arm was patted dry with an unperfumed paper towel. In an identical fashion, 15 g of formula Q was applied to the right arm, lathered, rinsed and dried. The purple fragrance beads readily ruptured with hand pressure during lathering. After 15 minutes, one hour and four hours, independent evaluators were asked to smell the right and left forearm and rate each for residual fragrance intensity. The results are summarized in Table 8 below. To minimize any possible first smelled bias by the evaluators, alternate forearms were smelled first. Evaluators were allowed to rate one forearm more intense than the other or rate both forearms equal in fragrance intensity.

TABLE 8

Time	Fragrance Intensity on Treated Forearm				No. Differences
	No. of Evaluators	P Formula More Intense	Q Formula More Intense		
15 min.	5	0	4	1	
60 min.	3	0	3	0	
240 min.	3	0	3	0	

After 15 minutes, one evaluator rated both arms equally intense, while four rated the one treated with Formula Q more intense. Subsequent longer time evaluation indicated the special skin substantive fragrance contained in Formula Q was always more intense.

The use of such macro beads to deliver other cosmetic and medical treatments to the skin would be known to those skilled in the art.

The pump dispenser generally designated 30 in FIG. 3 is of known design and includes a saddle bead 32 which can be pushed down with respect to a closure or cap 34, to raise a

6,045,813

11

first ball valve 36 and move a piston 38 downwardly in a cylinder 40 which is connected to a container 42 for containing the lotion, gel or other viscous composition 44 according to the present invention. Downward pumping action is resisted by a return spring 46 which engages around a second ball valve 48 which rises to allow fluid from the container 42 to rise in an inductor tube 50, past valve 48 and spring 46 up through a hollow interior channel in piston 38, and through the interior of head 32 to be dispensed at 52. With the internal diameters of inductor 50 and piston 38 and the geometry of ball valves 36 and 48 selected so that the fluid never passes through a constriction of less than the diameter of the largest beads in the composition, the beads will not rupture but will pass with the surrounding fluid in the direction of arrow 52. Conversely, if a pump dispenser is selected which has internal passages of smaller diameter, the beads will rupture allowing the contents of the beads to mix with the surrounding vehicle thus dispensing a colored mixture at 52.

FIG. 4 illustrates the conventional spray dispenser generally designated 60 which can also be used in accordance with the present invention for more fluid compositions which rise through a supply tube 62 during an initial priming step when the trigger 64 is pumped a few times to discharge air from an outlet conduit 66 to fill the conduit with the composition of the present invention. The composition is trapped in the passage 66 and its communicating passages, by a ball valve 68 and is dispensed by a piston 70 which is pushed inwardly against the action of a return spring 72, to dispense fluid from passage 66 in the direction of arrow 74.

While specific embodiments of the invention have been shown and described in detail to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A flowable composition, comprising:
a carrier; and
visible friable beads disbursed in the carrier, the beads containing an active ingredient and enclosing the active ingredient in a wall of bead material, the active ingredient amounting to approximately 0.5-5.0% by weight of the bead including its wall material and the active ingredient and including colorant in the wall material of the beads, the wall material being selected to be non-friable when exposed to a process for mixing the beads with the carrier.
2. A composition according to claim 1 wherein the active ingredient comprises bactericidal liquid.
3. A composition according to claim 1 wherein the active ingredient comprises at least one essential fragrance oil.
4. A composition according to claim 1 wherein the friable beads are maintained in the carrier for at least about 24 to 48 hours before the composition is used.
5. A composition according to claim 4 wherein the beads are from about 500 to about 1,500 microns in diameter and the wall thickness of the beads is between about 210 and 740 microns.
6. A composition according to claim 5 wherein the active ingredient comprises antibacterial liquid.
7. A composition according to claim 5 wherein the active ingredient comprises essential fragrance oils.
8. A composition according to claim 1 wherein the carrier contains one fragrance and the active ingredient comprises a different fragrance.

12

9. A composition according to claim 8 wherein the different fragrance in the beads is a skin activated essential fragrance oil, the fragrance in the carrier being a bulk fragrance.

10. A composition according to claim 1 wherein the active ingredient is selected from the group consisting of fragrance, bactericidal liquid, a pharmaceutical, a skin moisturizer and a cleanser, the carrier having a different color from the colorant in the wall material of the beads and the beads amounting to between 0.5 and 10% by weight of the composition.

11. A composition according to claim 10 wherein beads are from about 500 to about 1,500 microns in diameter and the wall thickness of the beads is between about 210 and 740 microns.

12. A method of treating a surface with an active ingredient comprising:

providing a carrier liquid;
dispensing in the carrier liquid a multiplicity of visible friable beads, each containing from about 0.5 to about 5.0% by weight active ingredients for treating the surface; and

massaging the carrier with beads onto the surface for rupturing the beads and discharging the active ingredient to mark the surface with ruptured beads.

13. A method according to claim 12 including providing colorant in the beads for smearing the colorant during rupturing of the beads.

14. A method according to claim 13 including providing essential fragrant oils in the beads as the active ingredient.

15. A method according to claim 13 including providing anti-bacterial liquid as the active ingredient in the beads.

16. A method according to claim 12 including providing the beads to have a diameter of about 500 to about 1,500 microns in diameter and the wall thickness of the beads is between about 210 and 740 microns.

17. A method according to claim 12 including maintaining the beads in the carrier liquid before massaging the carrier with beads to allow the beads to soften in the carrier.

18. A method according to claim 17 including maintaining the beads in the carrier before the massaging step for at least 24 hours.

19. A method of treating a surface with an active ingredient comprising:

providing a carrier liquid;
disbursing in the carrier liquid a multiplicity of visible friable beads, each containing from about 0.5 to about 5.0% by weight active ingredient for treating the surface;

dispensing the carrier with beads through a dispenser pump onto a surface; and

using the carrier with beads on the surface, at least one of the steps of dispensing or the step of using the beads on the surface, causing fracturing of the beads to spill their contents and mix it with the carrier liquid, the beads having a different color from the carrier liquid to act as an indicator that the beads have ruptured.

20. A method according to claim 19 including dispensing the carrier liquid with beads through a pump having passages and geometry for rupturing the beads and mixing the active ingredients with the carrier liquid before the carrier liquid leaves the pump.

* * * * *



100 DUTCH HILL ROAD, SUITE 80
GRANDBURG, NEW YORK 10962-2100
TELEPHONE: 914-359-7700
FAX: 914-359-7799
PATENTS, TRADEMARKS
COPYRIGHTS

VIA EXPRESS MAIL
TB 35407 3885 US

090505Z MAR 68

Sir:

Enclosed are:

1. Patent Specification, Claims and Abstract consisting of 28 pages;
2. Three (3) Sheets of Drawings containing Figs. 1-4;
3. Declaration and Power of Attorney;
4. Assignment with Cover Sheet for Recordal; and
5. Check in the amount of \$830.00.

Fees Calculation:

NOTARO & MICHALOS P.C.
Empire State Building
350 Fifth Avenue
Suite 6902
New York, New York 10118-6985

Patent
J25-277

LOTIONS AND GELS WITH ACTIVE INGREDIENTS IN BEADS

FIELD AND BACKGROUND OF THE INVENTION

5 The present invention relates, in general, to skin care
and household products, and in particular, to a new and useful
gel or lotion which can be used for such things as sanitizing
the hands, moisturizing and adding fragrance to the skin, a
shampoo, a liquid soap product, a household cleanser and the
10 like, which includes active ingredients such as antibacterial
agents or essential oils, which are captured within friable
beads.

15 The use of microencapsulation is known in various fields.
Microencapsulation involves the capturing of active
ingredients within a shell which can be broken or dissolved,
depending on the environment in which the active ingredient is
to be released. Generally, however, microencapsulation has
been utilized in the pharmaceutical and quasi-pharmaceutical
field, to time release medication, vitamins or minerals by
20 encapsulating the active ingredient within a shell which
dissolves over time in the stomach.

2

09050536-033098

The use of encapsulated materials to control release and improve the stability of composition is well established. Encapsulation efficiency can be improved by reducing the relative percentage of the protective wall material and increasing the quantity of the core encapsulate. Emphasis has been place on maximizing the absolute delivery of the encapsulated core material. The present invention teaches the use of macro capsules (500-1,500 microns) as a way to visually mark the coverage of personal care, household and pharmaceutical preparations. Further, this invention teaches a very low concentration of core material (0.5% to 5.0%) is an effective way to provide controlled release and visual indication of product coverage, which is contrary to general teaching in this field. The present invention can also be used to mix incompatible, quasi-compatible or complimentary ingredient (carrier formula and beads contents) at the time of use.

SUMMARY OF THE INVENTION

An object of the present invention is to take advantage of rupturable beads in a liquid gel or lotion, which contain small amounts of active ingredients for use in cleansing, treating or adding fragrance to the skin of a user or for other household uses.

According to the present invention, the beads may contain either an antiseptic such as Triclosan, or essential fragrance oils, referred to as essential oils, for imparting fragrance and/or other active ingredients to the skin such as moisturizers and the like, or as cleansers for other surfaces.

It was found by the inventors that the use of beads which were too flexible would allow the beads to survive the manufacturing process, but the beads would not then readily break when the lotion or gel was rubbed onto the skin. One hurdle which was overcome by the present invention was to utilize beads of proper diameter and wall thickness which did not rupture during the manufacturing process, but, after a 24 to 48 hour induction period were friable (pulverizable or rupturable) when the lotion or gel was rubbed onto the skin or dispensed through a restrictive orifice. It was found that beads that contained only about 0.5 to about 5% by weight active ingredient and which are mostly wall material, could be used according to the present invention and in fact, added an additional advantage in that the wall material could contain coloring which would act as an indicator to the user both that enough of the active ingredient was present on the hands or surface and secondly, that the active ingredient has been released in that the color would smear, indicating rupturing of the beads.

The use of beads also permitted the inventor to utilize a dual fragrance system. One fragrance is in the carrier lotion which carries the beads. This fragrance is tailored to be pleasant when exposed to the air. Another different fragrance, however, was used with the active ingredient in the beads, in particular, in the version of the invention for dispensing essential oils to the skin. This different fragrance was selected both to give a different scent, but also to be of the type of fragrance which is best activating when coming into contact with the skin. It is known in the field of fragrances that some fragrances are more effective as "room fresheners" and others are more effective as "perfumes"

in that they are more active and have different advantageous effects when applied to the skin. By providing the active ingredient with the skin compatible fragrance in the beads, two separate fragrances could be utilized in the product, and
5 fragrances which were tailored for their particular use, that is, either to give out a fragrance simply upon contact with the air or to give out a fragrance best when in contact with the skin.

The lotion and gels of the present invention whether for
10 containing the essential oils or the antibacterial agent, have preferred approximate diameters of about 500 to 900 microns with a wall thickness of about 210 to 440 microns.

Compositions in the form of a shower gel containing beads with essential oils, are generally about 1000 to 1500 microns
15 in diameter with a wall thickness of about 460 to about 740 microns.

Despite the relatively small volume within the bead wall, which is available for containing the antibacterial agent or essential oil at a rate of only about 0.5 to about 5%
20 by weight of the overall bead, sufficient active ingredient is present to satisfy the purpose of the invention and also to add the indicating function and provide sufficiently robust beads. Accordingly, the seeming disadvantage of having beads with very large wall thicknesses, is more than compensated by
25 the other advantages of indication and friability characteristics.

The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a
30 better understanding of the invention, its operating advantages and specific objects attained by its uses,

reference is made to the accompanying drawings and descriptive matter in which a preferred embodiment of the invention is illustrated.

5 BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a cross-sectional view of a bead for containing an active ingredient and for use in a lotion composition of the present invention;

10 Fig. 2 is a view similar to Fig. 1 of another embodiment of the bead for use with a gel of the present invention;

Fig. 3 is a schematic sectional view of a dispenser for lotions and gels which can be used to dispense the composition of the present invention and to practice the method of the present invention; and

15 Fig. 4 is a schematic sectional view of a sprayer mechanism which can also be used to dispense the composition of the present invention and in accordance with the method of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

20 Referring to the drawings, Fig. 1 illustrates a bead generally designated 10 in accordance with the present invention having a diameter D1 of about 500 to 900 microns and a wall thickness W1 of about 210 to 445 microns. Although these measurements are approximations, they are representative
25 and illustrate the fact that bead 10 is mostly wall thickness

6

with only a very small, roughly spherical volume 12 remaining to contain the active ingredients whether it is the antibacterial agent or the essential oils of the present invention. By weight, bead 10 is about 98 to 99.5% wall material and only about 0.5 to about 2% active ingredient in volume 12.

These dimensions are representative for the beads used in the lotions of the present invention, both the essential oil containing lotion referred to as an "Aromatherapy" lotion, and an antibacterial lotion containing Triclosan or other antibacterial agent.

Fig. 2 illustrates a bead generally designated 20 useful in gels of the present invention such as shower gels and shampoo gels. In this embodiment, the diameter D2 is about 1000 to 1500 microns and the wall thickness W2 is about 420 to 740 microns. This also leaves a volume 22 for containing only about 0.5 to about 5.0% by weight active ingredient, the bead being mostly inert wall material.

Although intuitively, this would appear to be a disadvantage in that very small amounts of active ingredients are present, in fact, the thick walls of the beads compensate any disadvantages by providing the advantages of dual fragrance capabilities and beads which are not friable during the manufacturing process involving mixing together and loading of the lotions or gels into bottles. The beads, after a 24 to 48 hour introduction period, do become friable when they are massaged into the skin or scalp, however, causing the beads to break and thus releasing their active ingredients in sufficient quantities to have the desired effects. In addition, the wall material can contain a harmless non-toxic colorant which is water soluble or water dispersible and which

adds to the effect of the invention by providing a visual cue to the amount of active ingredient being worked into the skin and also the fact that sufficient mechanical massaging has taken place to activate the ingredients by rupturing the beads and smearing to color. The beads, in effect, rupture and smear across the skin, releasing the active ingredient. The bead material is easily washed away with water, however, so that no adverse effect occurs. For example, a white, yellow or pink translucent or clear lotion or gel may contain blue or green color beads.

Another use of the invention involved a hydro alcoholic solution capable of dispensing a fragrance or providing an effective disinfective alcohol concentration to the skin or a hard surface. In this application, the encapsulated bead breaks inside the pump mechanism, intimately mixing and coloring the solution. Thus a clear solution with colored beads dispensed throughout can be dispensed onto the skin as a colored product. This can be used for both aesthetic purposes and functionally to mark product placement on the skin or some other surface.

An example of the shower gel has the following approximate composition and range of amounts:

Table 1

	<u>Ingredient</u>	<u>Representative Amount</u>	<u>Range</u>
25	Water	45	35-70
	Thickener	1.2	0.5-5
	Surfactant	36	12-40
	Fragrance	2	0.5-3
	Emollient	2	0.5-5
		7	

An example of a lotion according to the present invention is:

Table 2

	<u>Ingredient</u>	<u>Representative Amount</u>	<u>Range</u>
5	Water	80	40-90
	Emulsifier	4	3-10
	Emollient	10.75	2-10
	Botanicals	0.7	0.1-1
	Fragrance	1.0	0.2-3
10	Triclosan	0.3	0.1-1

In the lotion, the beads amount to approximately 0.5 to 2.0% by weight of the overall composition and in the gel, the beads amount to 0.5 to 1.0% of weight of the overall composition.

To be effective, the wall material must be colored and possess sufficient strength to withstand normal manufacturing mixing, pumping and filling operations. In use, the wall material must be friable enough to break easily with hand pressure or implement (cloth, sponge or paper) wiping.

Ideally, the macro capsule should have an impervious wall material in the dry state and gradually soften in the cleaning, cosmetic or pharmaceutical preparation. This characteristic allows the capsules to be processed fresh, in a hardened state, and become friable when equilibrium is established with the preparation.

Capsule breakage can be accomplished by hand or implement pressure after the preparation has been dispensed. It can

also be fractured at the time of application by dispensing the preparation through a mechanical pump or restricted orifice. This latter technique allows the colored wall material and its encapsulate core to intimately mix with the preparation at the precise moment of use. The resultant product is colored and provides strong visual indication of its coverage.

If the internal clearances of the pump are smaller than the D1 or the D2 in Figs. 1 and 2 herein, the cross sectional diameter of the bead, it will rupture inside the pump and intimately mix with the rest of the formula. This could lead to the mixing of two quasi-compatible or incompatible ingredients (formula and bead) to produce neutralization, heat, color or some other chemical reaction.

After the beads are placed in solution (aqueous or hydroalcoholic) the wall slowly softens and becomes friable. This induction period is dependent upon time, temperature and the surface activity of the formula. For the examples, this induction period is 24 to 48 hours at room temperature.

The following examples demonstrate the utility of the invention across three broad product categories: pharmaceutical, personal care and cleaners. These examples also demonstrate the importance of the induction period to produce friability. Finally, the examples demonstrate the bead release mechanics, via hand or implement wiping and internal breakage, via mechanical dispensing.

In all of the applications cited, the 500 to 1500 microns (31 thousandths to 58 thousandths of an inch) cellulose, lactose, hydroxypropyl methyl cellulose spherical macro beads identified by the trademark UNISPHERES manufactured by Induchen AG of Dubendorf, Switzerland and with the generalized formula listed below were added to the formula last. The

formulas were then transferred by pouring, (for laboratory preparations), or by pumping, (for commercial preparation), to their final containers. Standard diaphragm or displacement pumping equipment can be used so long as the beads have not passed through their induction period; i.e. when first added to the formula they are not shear sensitive as defined by the examples described below.

Table 3

Generalized Bead Composition

10	<u>Material</u>	<u>% by weight</u>
	Lactose	}
	Cellulose	}
	Hydroxypropyl Methyl Cellulose	}
		98
15	Color	
	Perfume or triclosan	2
		<u>100</u>

Table 4

Anti-Bacterial Water in Oil Lotion Formulas

20	<u>Material</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	<u>Function</u>
	Water	QS	QS	QS	QS	QS	QS	QS	QS	QS	Carrier
	Triclosan	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	Biocide
	Glycerin	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	Humectant
	Stearic Acid	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	Emulsifier
25	Triethanol										
	Amine	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	3.0	Neutralizer
	Cetyl										
	Alcohol	—	—	0.75	0.75	0.75	0.75	0.75	0.75	0.75	Emulsifier
	Glycol										

Stearate	___	___	3.5	3.5	3.5	3.5	3.5	3.5	3.5	Emollient
Dimethicone	___	___	0.25	0.25	0.25	0.25	0.25	0.25	0.25	Occlusive Agent
Wheat Germ Oil	___	___	0.4	0.4	0.4	0.4	0.4	0.4	0.4	Conditioning Agent
Panthenol	___	___	___	0.1	0.1	0.1	0.1	0.1	0.1	Conditioning Agent
Perfume, Apple	___	___	___	___	1.0	1.0	1.0	___	___	Fragrance
F, D, & C Yellow 6	___	___	___	___	___	___	0.001	___	___	Colorant
10Ultramarine Blue Beads	___	1.0	___	1.0	___	0.5	___	0.75	1.0	Biocide, Visual Indicator

15 100 100 100 100 100 100 100 100 100

Examples A through H (Pharmaceutical Application): Various triclosan containing anti bacterial oil in water emulsion were prepared by dispensing an aqueous phase into the oil phase and mixing until uniform. Color, fragrance, and skin conditioning agents were added to modify the preparation for various applications.

The product in example A is an opaque white emulsion. When applied to the skin it is difficult to visually gauge product coverage. Product from example B, containing the lactose-cellulose beads was placed in a tube and in two 8 oz. PVC plastic bottles fitted with commercially available dispensers, one of which is Fig. 3. This and other suitable dispensers are available from Calmar Inc. of City of Industry, CA.

Within an hour of preparation and filling, it was attempted to dispense Example B from another lotion pump dispenser with small complex internal passages. The beads quickly clogged the dispenser and product could not be dispensed. Product B was also dispensed from the bottle using the high volume of Fig. 3 pump. This time the product dispensed easily and the individual blue beads were readily observed in the white lotion. However, like the Product B dispensed from a tube, the beads were hard and could not be broken by hand rubbing.

Product or Example B was then allowed to remain at room temperature for 48 hours. After this induction period, product dispensed from the tube quickly broke under hand pressure. The presence of the blue colored beads clearly marked where the lotion had been dispensed. When the lotion was spread onto the skin, the hand pressure caused the blue colored beads to quickly break citing a trail of color which designated to the user product coverage. As the lotion was rubbed into the skin, the blue dissipated and left no recognizable color on the skin.

In a similar fashion, after 48 hours at room temperature, the product in Product B was dispensed through each of the two Calmar dispensers previously described. The results are described below. The pump of Fig. 3 is a high volume pump (0.8 to 1.2g per actuation) and has internal tolerances greater than the cross-sectional diameter of the bead. That is the blue beads passed through the pump mechanism without breaking and was dispensed onto the skin as a white lotion with discrete blue beads dispensed throughout. As with the product dispensed from the tube, the white lotion with blue beads quickly broke with hand pressure, marked where the

B

lotion had been, and quickly faded away leaving no recognizable color.

The other Calmar pump (a model MD-150) is a low volume pump (0.10 to 0.25 g per actuation) with internal tolerances smaller than the cross-sectional diameter of the beads. When dispensed, the internal pump mechanism in the MD-150 broke the beads, mixed them with the dispersed phase and the product exited the pump as a light blue homogeneous lotion. That is, the blue beads broke inside the pump at the discharge valve inside the spin chamber and mixed into the white lotion to produce a single-phase light blue lotion. The light blue lotion was easily discernable on the skin and quickly dissipated as it was rubbed into the skin. In a similar fashion, the product example pairs described by C/D, E/F and G/H behaved in the same fashion. The white lotions in C, E and G were functional but did not provide the user with a clear indication of product location or coverage. The white lotion with blue beads; D, F and H, after a 48 hour induction period, could be dispensed as an intact discrete two component system through a tube or a mechanical pump; e.g. the Calmar pump of Fig. 3 whose internal pumping tolerances or final restriction metering orifices were greater than the cross-sectional diameter of the beads. If the pump tolerances of final metering orifices were less than the cross-sectional lead diameter, the blue Triclosan beads broke and thoroughly mixed together to produce a homogenous single light blue lotion. The color of lotion could be easily adjusted by varying the concentration of blue Triclosan beads in the final formula. The higher the bead concentration, the more intense the homogeneous blue color.

14

This discovery also permits the preparation of two chemically incompatible ingredients to exist together in either the continuous lotion phase or dispersed bead phase. To demonstrate this, a small amount of F, D & C Yellow No. 6 was added to preparation H to produce Example I, a light yellow lotion with blue beads. When dispensed from a tube or a bottle fitted with a Fig. 3 pump, after the 48-hour induction period, the user could readily observe on the skin a light yellow lotion with blue Triclosan beads. This turned into a light green lotion as the hand pressure broke the beads and the blue and yellow mixed together. If a Calmar MD-150 pump is used, the light yellow lotion with blue Triclosan beads in the bottle will dispense as a homogenous light green lotion because the internal pump mechanism will break the blue beads and thoroughly mix them with the yellow lotion.

To further demonstrate the utility of this invention, the following examples are listed in Table 5 below. In all cases the beads were added to formula G for 24 to 48 hours before the experiment was conducted.

Table 5

Anti Bacterial Oil in Water Lotion Formulas
Encapsulated Bead Color Dispensing Options

<u>Experiment</u>	<u>Appearance Before Dispensing</u>	<u>Calmar Dispenser</u>	<u>Appearance After Dispensing</u>
1. Formula G + 1% blue beads	White Lotion with Blue Beads	MD-150	Uniform Light Blue Lotion
2. Formula G + 5% blue beads	White Lotion with Blue Beads	MD-150	Uniform Dark Blue Lotion

3. Formula G + 1% White lotion with
blue beads Blue and yellow MD-150 Uniform medium
and 1% yellow beads beads Green Lotion
- 5 4. Formula G + White lotion with
1% blue beads purple beads MD-150 Uniform medium
 Purple Lotion
5. Formula I Yellow Lotion with MD-150 Uniform medium
 Green Lotion
- 10 6. Formula I Yellow Lotion with Fig. 3 Yellow lotion
 with Blue
 Speckles which
 Formed a Medium
 Green Lotion When
 Rubbed into the
 Skin.

These experiments indicate a wide variety of colors and intensities can be created by either dispersing the appropriate concentration of colored beads in a white lotion or adding the appropriate concentration of colored beads to a colored lotion. The color can be created by fracturing the friable beads in the internal mechanical dispensing device when the pump tolerances are smaller than the cross sectional bead diameter. Alternately, the color can be created in situ on the skin or other hard surface by dispensing the preparation through a tube or mechanical dispenser with internal metering tolerances greater than the cross sectional bead diameter.

Those skilled in the art would readily recognize this discovery is also applicable to encapsulating one or more chemically reactive species within a bead and uniformly mixing the ingredient into the preparation at either the moment of mechanical dispensing or upon hand and/or implement pressure as the preparation is rubbed into the skin.

In each of the foregoing formulas and experiments, the presence of the colored ultramarine blue beads containing the triclosan active provided the user with a visible marker that the antibacterial preparation was being correctly and uniformly applied to the treated area. This is especially helpful to users where under application could create secondary infection or over application could create undue surrounding tissue trauma.

This invention is also applicable to other uses such as disinfecting hand surface cleansers and personal care products where visible indication of product coverage or specialized encapsulation of ingredients are important for performance and functionality.

Table 6

<u>Disinfecting Hard Surface Cleaner Formulas</u>						
<u>Percent by Weight</u>						
<u>Material</u>	J	K	L	M	<u>Function</u>	
Ethyl Alcohol	65	65	65	65	Anti Microbal	
Water	QS	QS	QS	QS	Solvent	
Diisopropyl Amine	0.5	0.5	0.5	0.5	Neutralizer	
Carbopol 941	0.35	0.35	0.35	0.35	Thickening/ Suspending Agent	
Aloe Vera Gel	—	—	0.5	0.5	Moisturizer	
Perfume, Apple	—	—	1.0	1.0	Fragrance	

Ultramarine Blue						
Triclosan Beads	—	0.5	—	1.0		Biocide, Visual
	—	—	—	—		
	100	100	100	100		Indicator

5

Formulas J through M are transparent, thickened, alcohol gels with viscosities of 5,000 to 8,000 cps. Formulas J and K are suitable hard surface disinfectant formulas suitable for kitchen and other food contact sanitization applications. They are also disinfectant products for bathroom and other hard surface articles such as doorknobs, shopping cart handles and telephone receivers. The formulas were made by dispensing the Carbopol 941 into water, neutralizing it with diisopropylamine and adding the alcohol. Perfume moisturizer and/or Triclosan beads were subsequently added.

10

15

The triclosan containing blue beads were added to formulas K and M and used within 30 minutes of preparation and after a 24 hour induction period. Formula K was dispensed with a trigger spray pump fabricated with a transparent plastic housing as shown in Fig. 4. This device was chosen because the blue beads could be visually observed during the dispensing operation.

20

25

Formula J, when sprayed onto a white enameled surface, was difficult to visually observe for coverage. Ultramarine blue triclosan beads were added to produce Formula K. When sprayed through the trigger spray pump within thirty minutes of preparation the pump quickly clogged. Visual inspection of transparent pump mechanism revealed the beads had become lodged in both the dip tube leading to the piston chamber and

in the piston chamber itself. Both areas were full of unbroken beads, rendering the pump nonfunctional. After 24 hours, Formula K was transferred to a new bottle and a new trigger spray pump of Fig. 4 was attached to the bottle. The formula easily dispensed through the pump. Visual inspection of the pump indicated the piston chamber contained a clear light blue homogenous solution indicating the clear continuous phase of the alcohol sanitizer had thoroughly mixed with the ultramarine triclosan beads. When sprayed onto a white enameled surface, a light blue solution was readily observed. This light blue solution was easily wiped away with a paper towel yielding a clean, disinfected surface.

Formula L an instant hand sanitizer, was poured onto the hands and rubbed into the skin. Product coverage was difficult to observe. Formula M was poured onto the hands within 30 minutes of preparation. A clear alcohol gel containing bright blue speckles was readily observed. The formula when rubbed into the hands, was very uncomfortable. The beads were hard and granular and could not be broken with hand pressure. After 24 hours, Formula M was poured into the hands. The transparent alcohol gel containing blue speckles easily fractured with hand pressure marking where the product had been applied. The formula easily rubbed into the hands and left no observable color.

Formulas N through Q are transparent, thickened, surfactant cleaning solution with viscosities of 8,000 to 20,000 cps. As in the previous examples, the lactose/cellulose beads described in Table 3 required a 24 to 48 hour induction period before the beads became friable and easily broken by mechanical, hand or implement pressure. The colored lactose/cellulose beads used in Formulas O and Q

19

contained a 100% active perfume oil specifically designed to be substantive to the skin. This encapsulated oil was different from the bulk fragrance in the shower gel. Bulk fragrances must be specifically formulated to be compatible with the preparation. They are incorporated into the final product with solvents or emulsifiers to yield homogenous solutions or dispersions. Since most of the perfume will be either rinsed, wiped or washed away, it is a very inefficient process to directly apply perfume to an absorbent substrate such as skin and retain lasting fragrance benefit from the absorbed perfume. Furthermore, the only fragrance effect that can be created is that fragrance which comes from the bulk perfume in the formula.

The examples listed in Table 7 demonstrate the ability to formulate a dual fragrance personal care product. This invention permits the user to experience both the fragrance from the bulk product during the shower or bathing activity and the same or different fragrance directly apply to the skin from a friable encapsulated fragrance bead. This produces a longer lasting fragrance benefit.

Table 7

Bath and Shower Formulas

Percent by Weight

	<u>Material</u>	N	O	P	Q	<u>Function</u>
25	TEA Laurel Sulfate	18.0	18.0	18.0	18.0	Surfactant
	Water	QS	QS	QS	QS	Solvent
	Carbopol 2020	1.2	1.2	1.2	1.2	Thickener
	Carboxymethylcellulose	0.1	0.1	0.1	0.1	Suspending Agent

	Triethanol Amine	1.3	1.3	1.3	1.3	Neutralizer
	Propylene Glycol	5.0	5.0	5.0	5.0	Rheology Control
	Ethyl Alcohol	4.0	4.0	4.0	4.0	Rheology Control
	Carbowax 400	0.9	0.9	0.9	0.9	Emulsifier
5	Citric Acid	0.1	0.1	0.1	0.1	pH Control
	Silicone Fluid	2.0	2.0	2.0	2.0	Moisturizer
	Germaben II	1.0	1.0	1.0	1.0	Preservative
	Fragrance: H&RA3025OR	2.0	2.0	2.0	2.0	Perfume
10	D&C Violet #2	0.007	0.007	0.007	0.007	Colorant
	Aloe Vera Gel	—	—	0.1	0.1	Moisturizer
	Chamomile Extract	—	—	0.1	0.1	Skin Softener
15	Purple Fragrance Beads H&R A3050D	—	0.5	—	0.5	Substantive Skin Fragrance and Visual Indicator

Formula N and O were dispensed onto a wash cloth and spread over a wet forearm. Both products foamed and cleaned the skin. Formula O, with the purple fragrance beads provided a clear visual marker on the skin and were easily broken by rubbing them with the wash cloth.

To demonstrate the advantages of having a separate, skin substantive fragrance in a macro capsule bead, the following experiment was conducted with formulas P and Q. As noted in Table 7, the only difference between the two formulas is the 0.5% by weight of the violet bead containing the skin substantive fragrance H&R A 30550D which was different from the fragrance H&R A 3025OR in the bulk product.

A test subject placed 15 g of Formula P on his moistened

left arm and lathered the arm for 15 seconds with his hand. The arm was then thoroughly rinsed for 60 seconds with 95°F tepid water from a fast flowing faucet (1.5 to 2.0 gallons per minute). The arm was patted dry with an unperfumed paper towel. In an identical fashion, 15g of formula Q was applied to the right arm, lathered, rinsed and dried. The purple fragrance beads readily ruptured with hand pressure during lathering. After 15 minutes, one hour and four hours, independent evaluators were asked to smell the right and left forearm and rate each for residual fragrance intensity. The results are summarized in Table 8 below. To minimize any possible first smelled bias by the evaluators, alternate forearms were smelled first. Evaluators were allowed to rate one forearm more intense than the other or rate both forearms equal in fragrance intensity.

Table 8

Fragrance Intensity
on Treated Forearm

Time	No. of Evaluators	P Formula More Intense	Q Formula More Intense	No. Differences
15 min.	5	0	4	1
60 min.	3	0	3	0
240 min.	3	0	3	0

After 15 minutes, one evaluator rated both arms equally intense, while four rated the one treated with Formula Q more intense. Subsequent longer time evaluation indicated the special skin substantive fragrance contained in Formula Q was always more intense.

The use of such macro beads to deliver other cosmetic and medical treatments to the skin would be known to those skilled in the art.

5 The pump dispenser generally designated 30 in Fig. 3 is of known design and includes a saddle head 32 which can be pushed down with respect to a closure or cap 34, to raise a first ball valve 36 and move a piston 38 downwardly in a cylinder 40 which is connected to a container 42 for containing the lotion, gel or other
10 viscous composition 44 according to the present invention. Downward pumping action is resisted by a return spring 46 which engages around a second ball valve 48 which rises to allow fluid from the container 42 to rise in an inductor tube 50, past valve 48 and spring 46
15 up through a hollow interior channel in piston 38, and through the interior of head 32 to be dispensed at 52. With the internal diameters of inductor 50 and piston 38 and the geometry of ball valves 36 and 48 selected so that the fluid never passes through a constriction of
20 less than the diameter of the largest beads in the composition, the beads will not rupture but will pass with the surrounding fluid in the direction of arrow 52. Conversely, if a pump dispenser is selected which has internal passages of smaller diameter, the beads will
25 rupture allowing the contents of the beads to mix with the surrounding vehicle thus dispensing a colored mixture at 52.

Fig. 4 illustrates the conventional spray dispenser generally designated 60 which can also be used in
30 accordance with the present invention for more fluid compositions which rise through a supply tube 62 during

23

an initial priming step when the trigger 64 is pumped a few times to discharge air from an outlet conduit 66 to fill the conduit with the composition of the present invention. The composition is trapped in the passage 66 and its communicating passages, by a ball valve 68 and is
5 dispensed by a piston 70 which is pushed inwardly against the action of a return spring 72, to dispense fluid from passage 66 in the direction of arrow 74.

While specific embodiments of the invention have
10 been shown and described in detail to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

09050536.033098

WHAT IS CLAIMED IS:

- 00050536-033098
1. A flowable composition, comprising:
a carrier; and
friable beads dispersed in the carrier, the beads
5 containing an active ingredient and enclosing the active
ingredient in a wall of bead material, the active
ingredient amounting to approximately 0.5 - 5.0% by
weight of the bead including its wall material and the
active ingredient and including colorant in the wall
10 material of the beads, the wall material being selected
to be non-friable when exposed to a process for mixing
the beads with the carrier.
 2. A composition according to claim 1 wherein the
active ingredient comprises bactericidal liquid.
 - 15 3. A composition according to claim 1 wherein the
active ingredient comprises at least one essential
fragrance oil.
 4. A composition according to claim 1 wherein the
friable beads are maintained in the carrier for at least
20 about 24 to 48 hours before the composition is used.
 5. A composition according to claim 4 wherein the beads
are from about 500 to about 1,500 microns in diameter and
the wall thickness of the beads is between about 210 and
740 microns.

6. A composition according to claim 5 wherein the active ingredient comprises antibacterial liquid.

7. A composition according to claim 5 wherein the active ingredient comprises essential fragrance oils.

5 8. A composition according to claim 1 wherein the carrier contains one fragrance and the active ingredient comprises a different fragrance.

9. A composition according to claim 8 wherein the different fragrance in the beads is a skin activated essential fragrance oil, the fragrance in the carrier being a bulk fragrance.
10

10. A composition according to claim 1 wherein the active ingredient is selected from the group consisting of fragrance, bactericidal liquid, a pharmaceutical, a skin moisturizer and a cleanser, the carrier having a different color from the colorant in the wall material of the beads and the beads amounting to between 0.5 and 10% by weight of the composition.
15

11. A composition according to claim 10 wherein beads are from about 500 to about 1,500 microns in diameter and the wall thickness of the beads is between about 210 and 740 microns.
20

12. A method of treating a surface with an active ingredient comprising:
25 providing a carrier liquid;

26

09050536.033098

- dispersing in the carrier liquid a multiplicity of
a visible friable beads, each containing from about 0.5 to about
5.0% by weight active ingredients for treating the
surface; and
- 9 massaging the carrier with beads onto the surface
for rupturing the beads and discharging the active
ingredient to mark the surface with ruptured beads.
13. A method according to claim 12 including providing
colorant in the beads for smearing the colorant during
10 rupturing of the beads.
14. A method according to claim 13 including providing
essential fragrant oils in the beads as the active
ingredient.
- 15 a 15. A method according to claims 13 and ~~14~~ including
providing anti-bacterial liquid as the active ingredient
in the beads.
16. A method according to claim 12 including providing
the beads to have a diameter of about 500 to about 1,500
microns in diameter and the wall thickness of the beads
20 is between about 210 and 740 microns.
17. A method according to claim 12 including maintaining
the beads in the carrier liquid before massaging the
carrier with beads to allow the beads to soften in the
carrier.

18. A method according to claim 17 including maintaining the beads in the carrier before the massaging step for at least 24 hours.

5 19. A method of treating a surface with an active ingredient comprising:

providing a carrier liquid;

10 *as provided*
dispensing in the carrier liquid a multiplicity of friable beads, each containing from about 0.5 to about 5.0% by weight active ingredient for treating the surface;

dispensing the carrier with beads through a dispenser pump onto a surface; and

15 using the carrier with beads on the surface, at least one of the steps of dispensing or the step of using the beads on the surface, causing fracturing of the beads to spill their contents and mix it with the carrier liquid, the beads having a different color from the carrier liquid to act as an indicator that the beads have ruptured.

20 20. A method according to claim 19 including dispensing the carrier liquid with beads through a pump having passages and geometry for rupturing the beads and mixing the active ingredients with the carrier liquid before the carrier liquid leaves the pump.

09050536.033098

09/050,536

ABSTRACT OF THE DISCLOSURE

5 A flowable personal care or cleaning composition, comprising a carrier and friable beads disbursed in the carrier, the beads containing an active ingredient and enclosing the active ingredient in a wall of bead material, the active ingredient amounting to approximately 0.5 - 5.0% by weight of the bead including its wall material and the active ingredient.

09050536-033098

Docket No. J25-277 US

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled LOTIONS AND GELS WITH ACTIVE INGREDIENTS IN BEADS
 the specification of which

(check one)

☒ is attached hereto
 was filed on _____ as
 Application Serial No. _____
 and was amended on _____
 (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
(Number)	(Country)	(Day/Month/Year Filed)	Yes []	No []
(Number)	(Country)	(Day/Month/Year Filed)	Yes []	No []
(Number)	(Country)	(Day/Month/Year Filed)	Yes []	No []

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below, and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.) (Filing Date) (Status)
 (patented, pending, abandoned)

(Application Serial No.) (Filing Date) (Status)
 (patented, pending, abandoned)

86050526.033098

BBW 0125074

Page 2

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Angelo Notaro Peter C. Michalos Mark A. Conklin John Zaccaria
Reg. No. 27,884 Reg. No. 28,643 Reg. No. 39,148 Reg. No. 40,241

Send Correspondence to: NOTARO & MICHALOS P.C.
Empire State Building
350 Fifth Avenue, Suite 6902
New York, New York 10118-6985

Direct Telephone Calls to: (212) 584-0200

John FERGUSON

Full name of named inventor

(John) Ferguson

Inventor's signature

25 March, 1998

DATE

Westerville, Ohio

Residence

U.S.A.

Citizenship

7 Limited Parkway East, Reynoldsburg, OH 43068

Post Office Address

George ZIETS

Full name of second inventor, if any

George Ziets

Inventor's signature

25 March, 1998

DATE

New Albany Ohio

Residence

U.S.A.

Citizenship

7 Limited Parkway East, Reynoldsburg, OH 43068

Post Office Address

09050536.033098

BBW 0125075

PRINT OF DRAWING^c
AS ORIGINALLY FILED

09/05/07, 536
1/3

SPRAT
424/457

FIG. 1

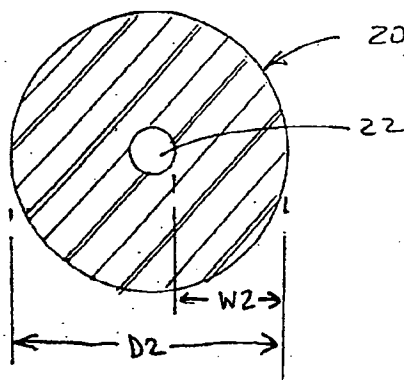
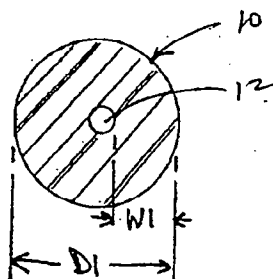


FIG. 2

09050536.033098

PRINT OF DRAWINGS
AS ORIGINALLY FILED

2/3

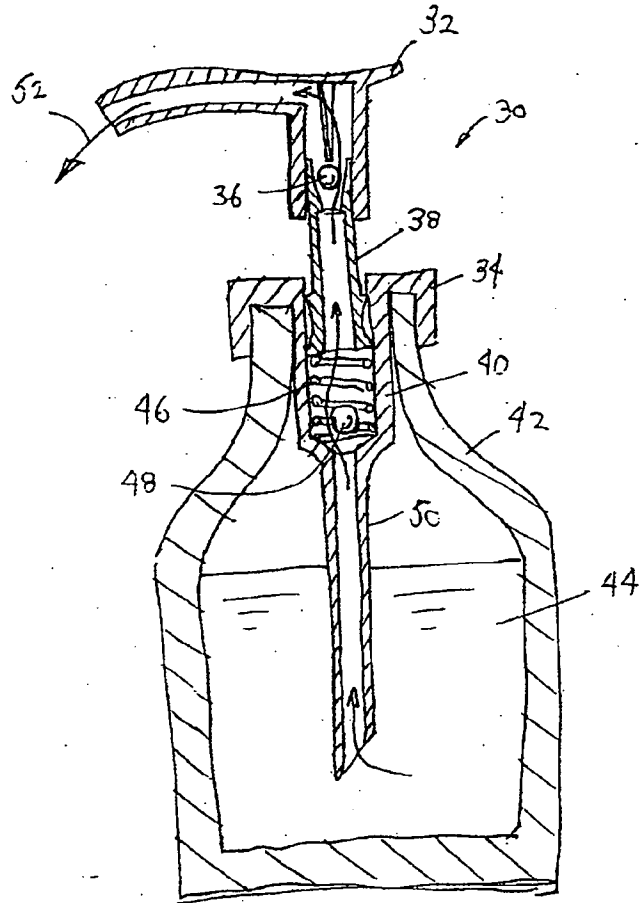
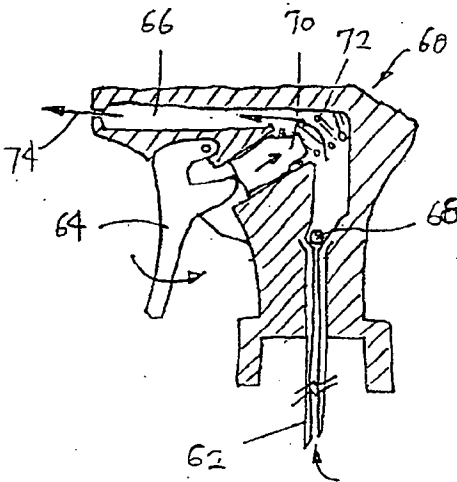


FIG. 3

BBW0125077-032008

PRINT OF DRAWINGS
AS ORIGINALLY FILED

3/3



09050536.033098



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

HL

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/050,536	03/30/98	FERGUSON	J

J25-277-US

HM22/0702

NOTARO & MICHALOS
EMPIRE STATE BUILDING
350 FIFTH AVENUE SUITE 6902
NEW YORK NY 10118-6985

EXAMINER
SPEAR, J

ART UNIT	PAPER NUMBER
1615	2

DATE MAILED: 07/02/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/050,536	Applicant(s) FERGUSON, ET AL.
	Examiner JAMES M. SPEAR	Group Art Unit 1615

☒ Responsive to communication(s) filed on Mar 20, 1998

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire THREE month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-20 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-19 is/are rejected.

☒ Claim(s) 20 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Application/Control Number: 09/050,536

Page 2

Art Unit: 1615

Claim 15 is objected to under 37 CFR 1.75© as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and or cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Noda et al. U.S. 5,089,269.

For claim 1, see examples 1-2, 2-3, 2-7, claim 1 of Noda et al. The reference shows active ingredients including drugs which would encompass bactericidal liquids and fragrance oils. See column 14, lines 3-12. The capsules are stable and

Application/Control Number: 09/050,536

Page 3

Art Unit: 1615

can be maintained in a carrier for at least about 24-48 hours. See column 20, line 60 through column 21, line 68. The examples further show the use of various colorants. See example 4-4. The skilled artisan would immediately envision minor modifications relating to carriers and containers for dispensing the carrier with beads. Cosmetic lotions/solutions by definition are considered to encompass pump dispensers. In describing the variety of suitable cosmetics the equivalent cosmetically acceptable containers, though not explicitly described, would be envisioned by one skilled in the art.

Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-19 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Spear whose telephone number is (703) 308-2457. The examiner can normally be reached on Monday thru Friday from 6:30 A.M. to 3:00 P.M.

Application/Control Number: 09/050,536

Page 4

Art Unit: 1615

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page, can be reached on (703) 308-2927. The fax phone number for this Group is (703) 305-3592 or 308-4556.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [thurman.page@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Application/Control Number: 09/050,536

Page 5

Art Unit: 1615

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 1235.

James M. Spear

June 30, 1999

James M. Spear
PRIMARY EXAMINER
ART UNIT 1615

Notice of References Cited			Application No. 09/050,538		Applicant(s) FERGUSON, ET AL.	
			Examiner JAMES M. SPEAR		Group Art Unit 1815	Page 1 of 1
U.S. PATENT DOCUMENTS						
	DOCUMENT NO.	DATE	NAME		CLASS	SUBCLASS
A	5,089,269	02/18/92	NODA, ET AL.		424	458
B						
C						
D						
E						
F						
G						
H						
I						
J						
K						
L						
M						
FOREIGN PATENT DOCUMENTS						
	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS
N						
O						
P						
Q						
R						
S						
T						
NON-PATENT DOCUMENTS						
	DOCUMENT (Including Author, Title, Source, and Pertinent Pages)					DATE
U						
V						
W						
X						

FORM PTO 948 (REV. 11-97)

U.S. DEPARTMENT OF COMMERCE-Patent and Trademark Office

Application No.

050536

NOTICE OF DRAFTPERSON'S
PATENT DRAWING REVIEW

The drawing filed (insert date)

3/30/98

- A. ☒ not objected to by the Draftperson under 37 CFR 1.84 or 1.152.
- B. ☒ objected to by the Draftperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this notice.

<p>1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:</p> <p>Black ink. Color.</p> <p>Color drawing are not acceptable until petition is granted.</p> <p>Fig(s) _____</p> <p>Pencil and non black ink is not permitted. Fig(s) _____</p> <p>2. PHOTOGRAPHS. 37 CFR 1.84(b)</p> <p>Photographs are not acceptable until petition is granted.</p> <p>3 full-tone sets are required. Fig(s) _____</p> <p>Photographs not properly mounted (must be on board or photographic double-weight paper). Fig(s) _____</p> <p>Poor quality (half-tone). Fig(s) _____</p> <p>3. TYPE OF PAPER. 37 CFR 1.84(e)</p> <p>Paper not flexible, strong, white and durable.</p> <p>Fig(s) _____</p> <p>Erasures, alterations, overwritings, interlineations, folds, copy machine marks not acceptable. (too thin)</p> <p>Mylar, vellum paper is not acceptable (too thin).</p> <p>Fig(s) _____</p> <p>4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes:</p> <p>21.0 cm by 29.7 cm (B4 size A4)</p> <p>21.6 cm by 27.9 cm (8 1/2 x 11 inches)</p> <p>All drawings sheets not the same size.</p> <p>Sheet(s) _____</p> <p>5. MARGINS. 37 CFR 1.84(g): Acceptable margins:</p> <p>Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm</p> <p>SIZE: A4 Size</p> <p>Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm</p> <p>SIZE: 8 1/2 x 11</p> <p>Margins not acceptable. Fig(s) _____</p> <p>Top (T) _____ Left (L) _____</p> <p>Right (R) _____ Bottom (B) _____</p> <p>6. VIEWS. 37 CFR 1.84(h)</p> <p>REMARKER: Specification may require revision to correspond to drawing changes.</p> <p>Views connected by projection lines or lead lines.</p> <p>Fig(s) _____</p> <p>Partial views. 37 CFR 1.84(h)(2)</p> <p>Brackets needed to show figure as one entity.</p> <p>Fig(s) _____</p> <p>Views not labeled separately or properly.</p> <p>Fig(s) _____</p> <p>Enlarged view not labeled separately or properly.</p> <p>Fig(s) _____</p>	<p>7. SECTIONAL VIEWS. 37 CFR 1.84(h)(3)</p> <p>Hatching not indicated for sectional portions of an object.</p> <p>Fig(s) _____</p> <p>Sectional designation should be noted with Arabic or Roman numbers. Fig(s) _____</p> <p>8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)</p> <p>Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned, so that the top becomes the right side, except for graphs. Fig(s) _____</p> <p>Views not on the same plane on drawing sheet. Fig(s) _____</p> <p>9. SCALE. 37 CFR 1.84(k)</p> <p>Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction.</p> <p>Fig(s) _____</p> <p>10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)</p> <p>Lines, numbers & letters not uniformly thick and well defined, clean, durable and black (poor line quality).</p> <p>Fig(s) <u>1-4</u></p> <p>11. SHADING. 37 CFR 1.84(m)</p> <p>Solid black areas pale. Fig(s) _____</p> <p>Solid black shading not permitted. Fig(s) _____</p> <p>Shade lines, pale, rough and blurred. Fig(s) _____</p> <p>12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)</p> <p>Numbers and reference characters not plain and legible.</p> <p>Fig(s) _____</p> <p>Figure legends are poor. Fig(s) _____</p> <p>Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(3) Fig(s) _____</p> <p>Enough alphabet not used. 37 CFR 1.84(p)(3) Fig(s) _____</p> <p>Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig(s) _____</p> <p>13. LEAD LINES. 37 CFR 1.84(q)</p> <p>Lead lines cross each other. Fig(s) _____</p> <p>Lead lines missing. Fig(s) _____</p> <p>14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.48(o)</p> <p>Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Fig(s) _____</p> <p>15. NUMBERING OF VIEWS. 37 CFR 1.84(u)</p> <p>Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) _____</p> <p>16. CORRECTIONS. 37 CFR 1.84(w)</p> <p>Corrections not made from PTO-948 dated _____</p> <p>17. DESIGN DRAWINGS. 37 CFR 1.152</p> <p>Surface shading shown not appropriate. Fig(s) _____</p> <p>Solid black shading not used for color contrast.</p> <p>Fig(s) _____</p>
<p>COMMENTS</p>	

REVIEWER

A.D.

DATE

5/12/98

TELEPHONE NO.

7030581001

ATTACHMENT TO PAPER NO.

PTO COPY

GAU 1615/2
Atty. Docket J25-277 US

CERTIFICATE OF MAILING I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Box NON-FEE AMENDMENT Assistant Commissioner for Patents Washington, D.C. 20231 on October 4, 1999 By: <u>Cary McIver</u> Dated: <u>October 4, 1999</u>
--



RECEIVED
OCT 12 1999
TECH CENTER 1600/2900

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Ferguson, et al.
Serial No. : 09/050,536
Filing Date : March 30, 1998
For : LOTIONS AND GELS WITH
ACTIVE INGREDIENTS IN BEADS
Examiner : Spear, J.
Group Art Unit : 1615

Box NON-FEE AMENDMENT
Assistant Commissioner
for Patents
Washington, D.C. 20231

AMENDMENT

Sir:

In response to the Office Action dated July 2, 1999, please
amend the above-identified application as follows:

IN THE CLAIMS:

In each of claim 1, line 3; claim 12, line 5; and claim 19, line 5, before "friable" insert --visible--

Claim 15, line 1, change "claims 13 and 14" to --claim 13--.

REMARKS:

Claims 1-20 are in the case and presented for consideration. Claim 15 has been corrected to depend only from claim 13, and the independent claims have been amended to explain that the beads are, in fact, visible. Please find support for this amendment at page 12, lines 6-8, for example.

The Examiner has rejected claims 1-19 as being fully anticipated by Noda, et al. Applicants gratefully acknowledge the Examiner's indication of allowability for claim 20.

It is sincerely believed, however, that the claims now presented are clearly patentable over the prior art in that the person having ordinary skill in this field would certainly not find the claimed invention obvious.

U.S. Patent 5,089,269 to Noda, et al. teaches that the weight ratio of a hydrophobic component, i.e. the material contained in the capsule to the gelatin that makes up the capsule, is between 1:10 to 100:1. Thus, at the lower end, the capsule loading of ingredients is between one part ingredient and ten parts gelatin: 1/11 or 9.09% by weight ingredients to 10/11 or 90.9% by weight

gelatin wall. At the upper end, capsule loading is one hundred parts ingredient and one part gelatin: 100/101 or 99% by weight ingredients to 1/101 or 1% by weight gelatin wall.

Dire consequences are repeatedly taught in Noda, et al. if the weight ratio of the gelatin wall exceeds 1:10. If the weight percent of actives contained in the gelatin capsule is less than 9.09%, for example, the capsule walls become too thick, escape of the capsules become marked, the capsules can not be easily broken and further, even if broken, portions of the wall film remain to give a feeling of foreign matter to the skin. (See Noda, et al. at column 9, line 59 to column 10, line 3, column 11, line 67, to column 12, line 5; column 13, line 14 to 18; column 14, line 26 to 30; column 15, lines 55 to 59; column 17, lines 17 to 22; column 19, line 10 to 14 and comparative examples in tables on column 23, line 16; column 25, line 54; column 26, line 58; column 29, line 3; column 36, line 7; column 37, line 54; column 38, line 42; column 41, line 5; column 42, line 33; column 43, line 23; column 45, line 50; column 47, line 57; column 50, line 13).

The present application teaches a very low concentration of core material (0.5% to 5.0%) is an effective way to provide controlled release and visual indication of product coverage, which is contrary to general teaching in the field. (See the specification at page 2, lines 11 to 13 and page 3, lines 10 to 12). The present application teaches an ingredient to capsule

weight ratio of 0.005:1 to 0.05:1; i.e. 0.5% to 5.0% by weight active ingredients, the remainder being wall material.

Both the present application and Noda, et al. measure the same capsule breakage attributes:

a) Noda, et al. measures capsule break strength instrumentally (column 14, lines 31 to 53) and by human sensory evaluation (column 25, lines 42 to 49).

b) The application utilizes mechanical (page 9, line 23; page 12, lines 1 to 10; page 17, line 24 to page 18, line 19) and sensory evaluation (Visual: page 8, lines 26 to 27; page 13, lines 23 to 30; page 14, lines 11 to 15; page 18, lines 5 to 12; page 20, lines 20 to 22 and skin feel: page 12, lines 8 to 10; page 12, lines 14 to 20; page 12, line 26 to page 13, line 2; page 14, lines 6 to 11; page 15, lines 9 to 15; page 18, lines 16 to 24) to measure break strength.

The person of ordinary skill in this field, thus, reading Noda, et al. would actually receive contrary teaching to the invention of claims 1, 12 and 19, in that the skilled artisan is taught that much more of the active ingredient must be supplied in each capsule, and each capsule must have a much thinner wall thickness or else it will not break.

Claims 1 and 19 distinguish the invention even further in that the beads are visible and have a color which is used as a color indicator. There is not indication that Noda, et al. contemplates

or suggests any purpose for having visible beads, and certainly no color indication function by virtue of rupturing of the beads.

Although claim 12 does not require the beads to have a color, it does call for the beads to be visible.

Noda, et al. also teaches a specific formulation which produces immediate break strength with no induction period. See, for example, claims 4 and 18.

This has been found by the inventors to be particularly useful during the manufacturing process and during use of the present invention for its intended purpose, whether the capsules are broken only by massaging the carrier with capsules into the skin, or by virtue of pumping the carrier with beads through a pump (allowable claim 20).

See, for example, Noda, et al. at column 7, lines 26-37; column 21, lines 1-12, 17-19, 27-29, 37-39 and 48-52. The immediacy of the final break strength in Noda, et al. is formulated into the bead at the time of preparation. See Noda, et al. at example 6-2 on column 47, line 14, to column 48, line 11.

The Examiner is also requested to review Figs. 1 and 2 of the present application which give a visual indication of exactly how thick the capsule wall, and how small the active ingredient volume is according to the present invention. The skilled artisan considering Noda, et al. would have no reason to provide capsules with this geometry, certainly without first reading the present

application.

The dependent claims distinguish the invention even further from Noda. For example, the combination of diameters and wall thicknesses (claims 5, 11 and 16, for example) would have to be deduced by a skilled artisan without help from the teaching of Noda, et al. Although the Examiner states that the skilled artisan would immediately envision minor modifications relating to carriers and containers for dispersing the carrier with beads, the skilled artisan would not contemplate providing beads with so little capacity for active ingredients and would certainly not teach the person of ordinary skill in this field any reason for providing beads of that type.

Other claims, such as claims 7-9, provide combinations of fragrance oils, particularly an oil which is skin activated in the beads and oil, which is a bulk fragrance in the carrier. In this way, the massaging of the beads after the carrier has been discharged on to the skin, discharges and thus activates the skin-activated fragrance exactly where it does the most good (on the skin) while retaining a pleasant fragrance for the carrier by virtue of the bulk fragrance.

When the capsules or beads are used as an indicator, then there is a rationale for providing the relatively massive walls containing colorant, since the walls themselves act as the indicator. Since Noda does not contemplate such massive walls, and

while providing colorant in some of the wall formulations does not contemplate use of the color as an indicator, the skilled artisan would have no reason to practice a method such as that called for in claims 13 or 19, for example.

For the foregoing reasons, the Examiner is respectfully requested to review this application and find the claims and application to be in condition for allowance.

Further favorable action is respectfully requested.


Dated: October 4, 1999



PCM:cm

NOTARO & MICHALOS P.C.
Empire State Building
350 Fifth Avenue
Suite 6902
New York, New York 10118-6985

Respectfully submitted,


Peter C. Michalos
Reg. No. 28,643
Attorney for Applicants
(212) 564-0200

Notice of Allowability	Application No. 09/050,536	Applicant(s) FERGUSON, ET AL.
	Examiner JAMES M. SPEAR	Group Art Unit 1615

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to THE AMENDMENT FILED OCTOBER 07, 1999

☒ The allowed claim(s) is/are 1-20

☐ The drawings filed on _____ are acceptable.

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.
☐ received in Application No. (Series Code/Serial Number) _____
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☒ Applicant MUST submit NEW FORMAL DRAWINGS

☐ because the originally filed drawings were declared by applicant to be informal.
☒ including changes required by the Notice of Draftsperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. 2
☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.
☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

☐ Notice of References Cited, PTO-892
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____
☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152
☐ Interview Summary, PTO-413
☐ Examiner's Amendment/Comment
☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
☒ Examiner's Statement of Reasons for Allowance

James M. Spear
 PRIMARY EXAMINER
 ART UNIT 1615

Application/Control Number: 09/050,536

Page 2

Art Unit: 1615

The following is an examiner's statement of reasons for allowance:

Applicants show a distinct structured bead comprised of an active ingredient dispersed in a carrier liquid and a method of using such a composition. The prior art shows microcapsules, particles and beads utilized in liquid compositions are known. Noda et al U.S. 5,089,269 considered the closest prior art of record shows a cosmetic composition comprised of microcapsules enclosing a hydrophobic component. The prior art does not show nor fairly suggest applicants' bead composition wherein the beads have a wall thickness of between about 210 and 740 microns, which may further have a colorant incorporated in the wall. The thick wall allows the microcapsule to be visible whether or not a colorant is present. The thick walled beads further have a lower amount of active ingredient capacity of approximately .5 to 5% by weight of the bead. Noda et al shows ratios of the hydrophobic component to be enclosed to components forming the gelatin capsule of 1:10 to 100:1, which would be no less than 9% active ingredient. The combination of low active ingredient concentration and distinct wall properties provides a means for effective controlled release of active agent and visual identification of bead components not shown nor recognized in the prior art.

Application/Control Number: 09/050,536

Page 3

Art Unit: 1615

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 1-20 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Spear whose telephone number is (703) 308-2457. The examiner can normally be reached on Monday thru Friday from 6:30 A.M. to 3:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page, can be reached on (703) 308-2927. The fax phone number for this Group is (703) 305-3592 or 308-4556.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [thurman.page@uspto.gov].

Application/Control Number: 09/050,536

Page 4

Art Unit: 1615

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 1235.

James M. Spear

December 16, 1999

James M. Spear
PRIMARY EXAMINER
ART UNIT 1615



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

HM22/JJ221

NOTARO & MICHALOS
EMPIRE STATE BUILDING
350 FIFTH AVENUE SUITE 6902
NEW YORK NY 10112-6905

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/050,536	03/30/98	020	SPEAR, J	1615 12/21/99
First Named Applicant	FERGUSON,	35 USC 154(b) term ext. = 0 Days.		

TITLE OF INVENTION: LOTIONS AND GELS WITH ACTIVE INGREDIENTS IN BEADS

ATTYS DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
J25-277-US	424-401.000	G10	UTILITY	NO	\$1210.00	03/21/00

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number.
Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PATENT AND TRADEMARK OFFICE COPY
PTOL-65 (REV. 10-96) Approved for use through 09/30/99. (0651-0033)

U.S. GPO: 1999-434-407/24601

BBW 0125098



ATTNY. DOCKET J25-277 US

<p>CERTIFICATE OF MAILING I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Box ISSUE FEE Assistant Commissioner for Patents Washington, D.C. 20231 on: January 24, 2000</p> <p><i>Cary McIver</i> By: Cary McIver Dated: January 24, 2000</p>
--

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT	:	Ferguson, et al.
SERIAL NO.	:	09/050,536
FILING DATE	:	March 30, 1998
FOR	:	LOTIONS AND GELS WITH ACTIVE INGREDIENTS IN BEADS
EXAMINER	:	Spear, J.
GROUP ART UNIT	:	1615
BATCH NO.	:	G10

Box ISSUE FEE
Assistant Commissioner
for Patents
Washington, D.C. 20231

LETTER TO OFFICIAL DRAFTSMAN

Sir:

In response to the issuance of a Form PTO-948, "NOTICE OF
DRAFTSPERSON'S PATENT DRAWING REVIEW", applicant submits herewith

three (3) sheets; namely Figs. 1-4, labeled and in duplicate (a total of 6 sheets).


It is respectfully requested that the Official Draftsman review and accept the corrected drawings.

A Notice of Allowance has been issued on December 21, 1999, and the issue fee is being paid concurrently with this submission.

Dated: January 24, 2000

Respectfully submitted,

PCM:cm
Enclosure


Peter C. Michalos.
Reg. No. 28,643
Attorney for Applicant
(212) 564-0200

NOTARO & MICHALOS P.C.
Empire State Building
350 Fifth Avenue, Suite 6902
New York, New York 10118-0110

6045813

1/3

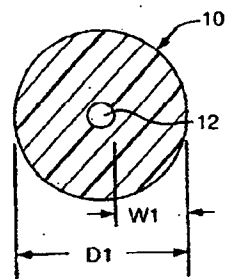


FIG. 1

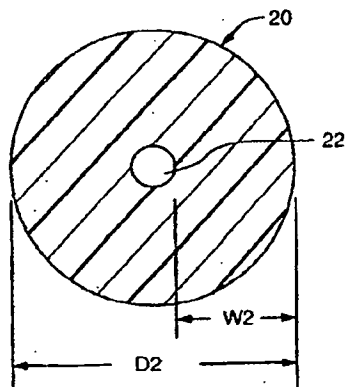


FIG. 2

2/3

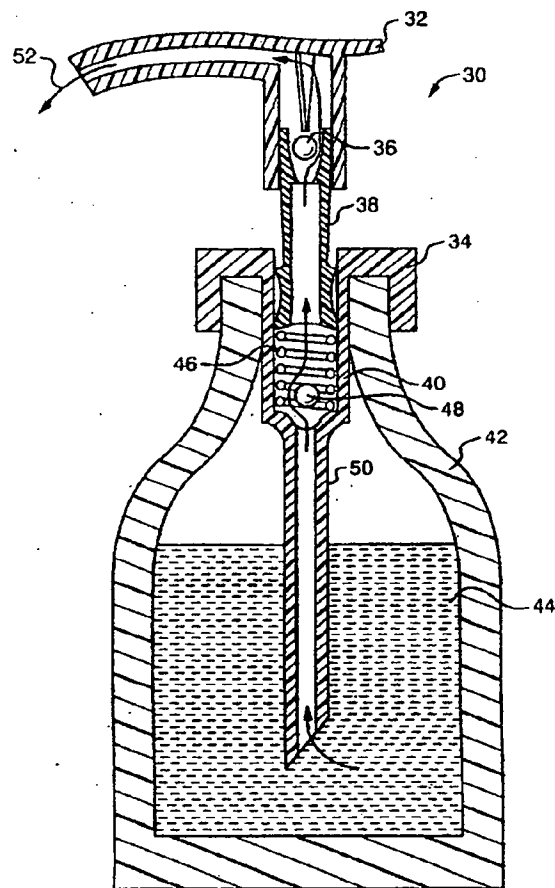


FIG. 3

3/3

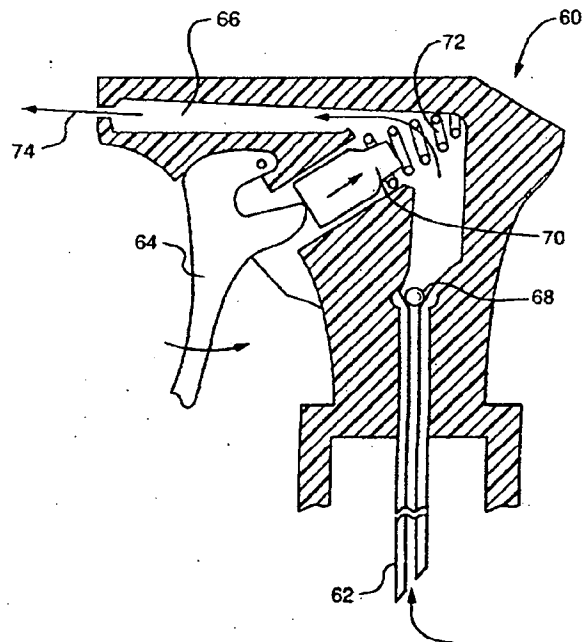


FIG. 4

PART J—ISSUE FEE TRANSMITTAL

Complete and mail this form, together with app fee, to: Box ISSUE FEE
Assistant Commissioner for Patents
Washington, D.C. 20231

DEC 23 1999

B/A
9

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1; by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1).

NOTARO & MICHALOS
EMPIRE STATE BUILDING
350 FIFTH AVENUE SUITE 6902
NEW YORK NY 10118-6985

HM22/1221



Note: The certificate of mailing below can only be used for domestic mailings of the Issue Fee Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

Certificate of Mailing

I hereby certify that this Issue Fee Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above on the date indicated below.

Cary McIver (Depositor's name)

[Signature] (Signature)

January 24, 2000 (Date)

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/USO, 536	03/30/98	020	SPEAR, J	1615 12/21/99
First Named Applicant	FERGUSON,	35 USC 154(b) term ext. =	0 Days.	

TITLE OF INVENTION LOTIONS AND GELS WITH ACTIVE INGREDIENTS IN BEADS

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
1	J25-277-US	424-401.000	G10 UTILITY	NO	\$1213.00 \$1213.00	03/21/00

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). Use of PTO form(s) and Customer Number are recommended, but not required.

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" indication form PTO/SB/47) attached.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

Colucci & Ugians

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Duplication of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE Bath & Body Works, Inc.

(B) RESIDENCE (CITY & STATE OR COUNTRY) Reynoldsburg, Ohio

Please check the appropriate assignee category indicated below (will not be printed on the patent)

☐ Individual ☒ corporation or other private group entity ☐ government

4a. The following fees are enclosed (make check payable to Commissioner of Patents and Trademarks):

☒ Issue Fee
☒ Advance Order - # of Copies 1

4b. The following fees or deficiency in these fees should be charged to:
DEPOSIT ACCOUNT NUMBER 14-1431
(ENCLOSE AN EXTRA COPY OF THIS FORM)

☐ Issue Fee
☐ Advance Order - # of Copies

The COMMISSIONER OF PATENTS AND TRADEMARKS IS requested to apply the Issue Fee to the application identified above.

(Authorized Signature) [Signature] (Date) 1/24/00

NOTE: The Issue Fee will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

Burdens Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND FEES AND THIS FORM TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATUTORY PERIOD
EXPIRES March 31, 2000

01/31/2000 KSH/FEI: 00000029 99950536

01 FC:142 1210.00 00
02 FC:561 3.00 99

TRANSMIT THIS FORM WITH FEE

PTOL-858 (REV.10-98) Approved for use through 06/30/99. OMB 0651-0003

Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

BBW 0125104

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

H. Dandy
6-5-99

04/02/1998 MPELLARI 00000015 03058336
01 FCI:151 795.00 UP

Encls. Ref: 04/02/1998 MPELLARI 0007284600
000114131 Exam/Number: 03058336
FC: 794 145.00 CR

PTO-1556
(5/87)

BBW 0125105

PATENT APPLICATION FEE DETERMINATION RECORD					Application or Docket Number	
Effective October 1, 1997					09/200,536	
CLAIMS AS FILED - PART I						
(Column 1)		(Column 2)				
FOR	NUMBER FILED	NUMBER EXTRA		SMALL ENTITY TYPE <input type="checkbox"/>	OR	OTHER THAN SMALL ENTITY
BASIC FEE				RATE	FEE	RATE
TOTAL CLAIMS	20	minus 20 =	"	395.00	OR	790.00
INDEPENDENT CLAIMS	3	minus 3 =	"	x\$11=	OR	x\$22=
MULTIPLE DEPENDENT CLAIM PRESENT				x41=	OR	x82=
				+135=	OR	+270=
				TOTAL	OR	TOTAL 790
* If the difference in column 1 is less than zero, enter "0" in column 2						
CLAIMS AS AMENDED - PART II						
(Column 1)		(Column 2)		(Column 3)		
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			
	Total	Minus	**	=		
	Independent	Minus	***	=		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					
(Column 1)		(Column 2)		(Column 3)		
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			
	Total	Minus	**	=		
	Independent	Minus	***	=		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					
(Column 1)		(Column 2)		(Column 3)		
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA			
	Total	Minus	**	=		
	Independent	Minus	***	=		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					
(Column 1)		(Column 2)		(Column 3)		
				RATE	ADDI- TIONAL FEE	RATE
				x\$11=	OR	x\$22=
				x41=	OR	x82=
				+135=	OR	+270=
				TOTAL ADDIT. FEE	OR	TOTAL ADDIT. FEE

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" in THIS SPACE is less than 20, enter "20."
 *** If the "Highest Number Previously Paid For" in THIS SPACE is less than 3, enter "3."
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET (FOR USE WITH FORM PTO-873)							SERIAL NO. 09/050,536	FILING DATE 03-30-98
							APPLICANT(S)	
CLAIMS								
	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT			
	IND.	DEP.	IND.	DEP.	IND.	DEP.		
1							51	
2							52	
3							53	
4							54	
5							55	
6							56	
7							57	
8							58	
9							59	
10							60	
11							61	
12							62	
13							63	
14							64	
15							65	
16							66	
17							67	
18							68	
19							69	
20							70	
21							71	
22							72	
23							73	
24							74	
25							75	
26							76	
27							77	
28							78	
29							79	
30							80	
31							81	
32							82	
33							83	
34							84	
35							85	
36							86	
37							87	
38							88	
39							89	
40							90	
41							91	
42							92	
43							93	
44							94	
45							95	
46							96	
47							97	
48							98	
49							99	
50							100	
TOTAL IND.	3						TOTAL IND.	
TOTAL DEP.	17						TOTAL DEP.	
TOTAL CLAIMS	20						TOTAL CLAIMS	

* MAY BE USED FOR ADDITIONAL CLAIMS OR ADVERTISEMENTS

FORM PTO-1360 (REV. 3-78)

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

ISSUE SLIP STAPLE AREA (for additional cross references)

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION	<i>jeur W</i>	450	<i>NOV 04-09-98</i>
O.I.P.E. CLASSIFIER		<i>59</i>	<i>4-8</i>
FORMALITY REVIEW	<i>MA</i>	<i>826</i>	<i>3/4/98</i>

INDEX OF CLAIMS

✓ Rejected N Non-elected
 = Allowed I Interference
 - (Through numeral) Canceled A Appeal
 + Restricted O Objected

Claim	Date
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	

Claim	Date
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	

Claim	Date
101	
102	
103	
104	
105	
106	
107	
108	
109	
110	
111	
112	
113	
114	
115	
116	
117	
118	
119	
120	
121	
122	
123	
124	
125	
126	
127	
128	
129	
130	
131	
132	
133	
134	
135	
136	
137	
138	
139	
140	
141	
142	
143	
144	
145	
146	
147	
148	
149	
150	

If more than 150 claims or 10 actions
staple additional sheet here

(LEFT INSIDE)

SEARCHED				SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
Class	Sub.	Date	Exmr.		Date	Exmr.
424	451	6-19-99	gpear	WEST	12-16-99	gpear
	455	"	"			
	456	"	"			
	401	"	"			
	489	"	"			
	63	"	"			
	452	"	"			
428	402.2	6-19-99	gpear			
Above To Date		12-16-99	gpear			

INTERFERENCE SEARCHED			
Class	Sub.	Date	Exmr.
424	451	12-16-99	gpear
	455	"	"
	456	"	"
	401	"	"
	489	"	"
	63	"	"
	452	"	"
428	402.2	"	"

(RIGHT OUTSIDE)

EXHIBIT 6

EXHIBIT

6

REDACTED

EXHIBIT 7

EXHIBIT

7

REDACTED

EXHIBIT 8

EXHIBIT
8

REDACTED

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served on this 25th day of June, 2008 with the Clerk of Court using CM/ECF which will send notification of such filing(s) to the following:

Melanie K. Sharp
Karen Elizabeth Keller
Young, Conaway, Stargatt & Taylor
The Brandywine Building
1000 West Street, 17th Floor
P.O. Box 391
Wilmington, Delaware 19899-0391

E. Anthony Figg
Sharon L. Davis
C. Nicole Gifford
Daniel L. Shores
Rothwell, Figg, Ernst & Manbeck, P.C.
1425 K Street, N.W.
Suite 800
Washington, D.C. 20005

By: /s/ Francis G.X. Pileggi
Francis G.X. Pileggi (Del. Bar No. 2624)